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ORIGINAL ARTICLES

MEASLES PROPHYLAXIS

The Use of Blood from Convalescents in a School Epidemic

BY JAMES H. TOWNSEND, M.D.

THE occurrence of measles in a boarding school of 400 boys during the winter term of 1926, involving a very large proportion of the susceptible population afforded an opportunity to observe the effects of inoculation with blood obtained from recent convalescents.

On January 13th, 1926, the morning after the opening of school for the winter term, a boy (Case 1) came to the Infirmary at the height of the catarrhal stage of measles. On the previous day he had traveled from New York to Concord, New Hampshire, in company with a large number of other boys returning to school, and had eaten one meal in a school dining hall, so that he had exposed a large number of other boys before he was isolated. On January 14th, another boy (Case 2) reported to the Infirmary in the same condition. He also had returned from New York the previous day in company with a large number of his schoolmates, exposing a considerable number of susceptible boys.

From those boys who had been exposed to the two first cases, a group of six was selected who had been most intimately exposed, and who had never had measles, and these six boys were given an inoculation of 20 cc. of whole blood from an adult who had had measles twenty years previously, since there was no convalescent blood or serum available at the time. The subsequent history of these six boys will be explained later.

No further measles developed until one week after the first case, when his brother (Case 3) and one of his companions (Case 4) on the journey to school developed their first symptoms. Case 3 had been expected to develop measles and was isolated in the Infirmary for one full day before the development of any symptoms, so that he did not expose any other boys, but Case 4 was supposed to have had measles previously, so that he probably exposed a considerable number of his schoolmates before coming to the Infirmary, even though he was isolated very early in the catarrhal stage, and four full days before his rash developed.

On January 24th, a fifth case appeared, one of those inoculated with the blood of the adult. On the 25th a sixth case appeared, on the 26th a seventh case, and on the 27th the eighth case. This group of four boys who came in between January 24th and 27th, who form the second generation of the epidemic, included a representative of each of the three main divisions of the school, namely: the Lower School which houses and feeds one hundred of the youngest boys; The School, which houses and feeds about 120 of the next older group; and the Upper School, comprising about 180 boys who live in a group of smaller houses, but who eat together in a common dining hall, and are closely associated in classes and other ways.

To add to the difficulty of controlling the disease by isolation only, another case of measles (Case 9) appeared on January 29th, in a boy who had returned from New York only six days previously, and who did not report his condition until his rash appeared, so that he had probably been exposing his schoolmates for at least three days before he was isolated. It was apparent that the whole school was probably exposed, and that we might expect an epidemic involving most of the boys who had not had measles previously. It was therefore determined to obtain, as soon as possible, blood from our recently recovered cases, and to inoculate all of the boys in the school who had never had measles.

From the medical history cards a list was prepared of all boys in the school who gave no previous history of measles. In a number of cases there was a question as to whether they had had measles or not. In some cases the boys felt quite sure they had had it, while the parents' record did not mention it; in others the reverse was the case. Sometimes it was not known whether the illness in question was measles or Rubella. Subsequent developments showed that we did not inoculate all the susceptible individuals, for a number developed the disease before enough blood was available, and twelve boys contracted measles who gave a history of what was thought to be measles at some previous time.

Because of the lack of suitable equipment for the proper separation of serum, it was decided to use citrated whole blood in these inoculations, and a dosage of 10 cc. of the citrated blood was determined upon. This inoculation contained about 9 cc. of the original whole blood which had been diluted with 10% of its volume of 2% sodium citrate solution, and is the equivalent of between 5 and 5½ cc. of serum. The injection was given intramuscularly into the gluteal muscles. A Wassermann reaction was performed on each lot of blood.

On January 27th, eleven days after the appearance of his rash, blood was obtained from the second patient (E.E.W.), and given to twenty-one boys from whom no clear history of measles was obtainable. On January 29th, blood was obtained from a boy (G.H.H.) who had had measles at home during the recent vacation, and who had just returned to school, about seventeen days after the appearance of his rash, and this blood was given to twenty-two other boys who gave no history of measles in the past. On the next day one other boy was inoculated with blood from the first source. No more blood was obtainable until February 5th, when a sufficient quantity was obtained from the seventh case in the series, nine days after the appearance of his rash, to inoculate the remaining boys in the school who were supposed never to have had measles, twelve in all. Altogether fifty-six were inoculated with convalescent blood, and their subsequent history in comparison with the history of a control group of twenty-one measles cases who received no blood forms the basis of this paper. These twenty-one in the control group either developed the disease before the blood was available or else had received no blood because they were supposed to have had a previous attack of measles, which in all cases seems doubtful.

The 3rd generation of measles began to appear on the 4th of February, and between this day and the 10th, thirty-four cases of measles appeared in rapid succession from all parts of the school, bringing the total up to 43. From then on, it was not possible to trace the exposures, nor to distinguish clearly between the last of the 3rd generation and the first of the 4th generation, but altogether 20 more cases appeared in the next two weeks, and two boys developed measles at home, making a total of 65, 63 of which occurred at school. The last case appeared on February 24th, so that the epidemic had run its course in four generations, lasting six weeks, and in this time involved practically every boy who was susceptible.

I. EFFECT UPON THE SPREAD OF THE DISEASE

In most instances it is not possible to trace the exact date of infection, and in calculating the probable date of infection, the day of the appearance of the rash is used rather than the date of development of the first symptoms, and it is assumed that infection took place about fourteen days before the development of the rash. This is the date used in determining at what stage in the incubation period the inoculation was received.

A. The six boys who received 20 cc. of blood from the adult who had measles twenty years before, all developed measles in the present epidemic, and the appearance of the rash varied from 10 to 28 days after the inoculation, so that this inoculation appeared to have no effect whatever upon the development of the disease, when it was given in the early days of the incubation period or even some days before the date of exposure. In this dosage, namely 20 cc., the whole blood of an adult who had measles twenty years before cannot be depended upon to prevent the spread of the disease.

B. Of the twenty-one boys who received inoculations with convalescent blood on January 27th, 16 developed measles, and the appearance of the rash varied from 10 to 24 days after the date of inoculation. Of the 5 boys in this group who did not develop measles, there exists considerable doubt as to the susceptibility of four in whose cases there is a history in past years of an illness of doubtful nature. It is not known whether this disease was measles or Rubella. Only one of these five has no history of measles or an illness which might be measles.

C. Of the twenty-two boys who received inoculations on January 29th, fifteen developed measles in this epidemic, and the appearance of the rash varied from 8 to 26 days after the date of inoculation. Of the 7 boys who did not develop measles, doubt exists as to the susceptibility of five who may have had measles in the past. Only two gave a reasonably clear history of never having measles. The one boy who was inoculated on January 30th, did not develop measles, but it is probable that he had had measles in early childhood.

D. Of the 12 boys who received inoculations on February 5th, seven developed measles in the present epidemic, and the appearance of the rash varied from four days to fourteen days after the date of inoculation. All five of those who did not develop measles have a doubtful history of measles in the past.

Considering groups B, C and D together, we see that of 56 boys who received an inoculation with convalescent blood, 38 developed measles, and that of the 18 who did not develop measles, there exists doubt as to the susceptibility of fifteen who probably had measles in previous years. Only three boys of this whole group who were inoculated, and in fact of the whole school of 400, give a reasonably clear history of never having measles, and escaped infection in the present epidemic. It seems very probable therefore that in this dosage, blood from convalescent patients had very little influence on the spread of the disease, either when the inoculation was given in the early days of the incubation period, or when it was given before the date on which infection took place, for in this group there exist cases who developed a rash on the 12th, 13th, 14th, 15th, 16th, 19th, 21st, 23rd, 24th, and 26th days after the inoculation.

II. EFFECT UPON THE SEVERITY OF THE DISEASE

In judging the severity of the disease for the purposes of comparison, four criteria have been used, namely:

1. The duration of the febrile period.
2. The highest temperature occurring during the course of the disease.
3. The total number of days spent in the Infirmary.
4. The occurrence of complications.

Tables 1, 2, 3 and 4 give this data for the sixty-three cases of measles, which occurred at the school during the epidemic. Twenty-one of these received no inoculation whatever, six received blood from an adult who had measles twenty years previously, and thirty-six received an inoculation with convalescent blood. The thirty-six who received convalescent blood are divided into two groups, one group of four including those who developed a rash within one week of the date of inoculation, and the other group of 32 who developed the rash more than one week after the inoculation, and who therefore probably received the inoculation during the first week of the incubation period or before the date of infection.

A. The group of 21 who received no inoculation whatever showed:

TABLE I

21 BOYS WHO RECEIVED NO INOCULATION

No.	Initials	Age	Admitted	Dis-charged	Days lost	Highest temp.	Days of fever	Complications
1	R. I. M.	17	1/13	1/30	17	104.2	8	Otitis media
2	E. E. W.	18	1/14	1/28	14	102.8	4	None
4	A. G. M.	15	1/20	2/3	14	103.2	8	None
6	S. S. D., Jr.	14	1/25	2/7	13	103.4	7	None
7	J. I. P.	16	1/26	2/9	14	103.8	5	None
8	J. R. M.	17	1/27	2/9	13	102.8	7	None
9	G. O. B. U.	18	1/29	2/9	11	104.0	4	None
11	H. J. P.	16	2/4	2/17	13	103.4	7	None
14	S. A. C.	18	2/5	2/18	13	103.2	7	None
15	A. R.	15	2/5	2/17	12	103.4	7	None
24	W. H. L.	15	2/7	2/20	14	103.0	7	None
27	J. B. F. W.	15	2/8	2/18	10	104.4	4	External otitis
28	P. deG.	14	2/8	2/19	11	104.2	5	None
31	C. B.	15	2/18	2/28	10	102.8	4	None
35	J. P. R.	15	2/8	2/22	14	103.6	8	None
49	B. L. H.	13	2/15	3/9	22	104.2	13	Bronchopneumonia
50	R. B. T. R.	15	2/15	3/4	17	103.6	12	Frontal sinusitis
51	M. A.	17	2/16	2/28	12	103.8	7	None
58	H. B. B., Jr.	13	2/20	3/2	10	104.0	4	None
59	J. B. W., Jr.	14	2/20	3/1	9	103.2	4	None
61	A. H. H.	15	2/22	2/4	10	101.6	4	None

Average duration of febrile period = 6.45 days
Average maximum temperature = 103.5°
Average loss of time = 13.0 days

TABLE II

BOYS WHO HAD HAD ADULT BLOOD

No.	Initials	Age	Ad-mitted	Dis-charged	Days lost	Days elapsing between inocula-tion and rash	Source of blood	Highest temp.	Days of fever	Complications
3	M. F. M.	16	1/20	2/3	14	10	J. H. T.	103.6	7	None
5	R. F. R.	18	1/24	2/7	14	13	J. H. T.	103.4	6	None
10	R. P. P.	15	2/4	2/15	11	22	J. H. T.	102.6	5	None
21	L. R. W.	15	2/11	2/23	12	27	J. H. T.	103.2	4	Otitis media double
30	P. W. C.	18	2/8	2/20	12	28	J. H. T.	103.2	6	None
39	A. F.	17	2/10	2/19	9	28	J. H. T.	104.6	3	None

Average duration of febrile period = 5.16 days
Average maximum temperature = 103.6°
Average loss of time = 12.0 days

1. An average duration of the febrile period of 6.45 days.
2. An average maximum temperature of 103.5°.
3. An average stay in the Infirmary of thirteen days.
4. Four cases with complication: One of pneumococcus bronchopneumonia; one of streptococcus otitis media; one of frontal sinusitis; and one of external otitis.

The shortest febrile period was four days, and the longest thirteen days. The lowest maximum temperature was 101.6°, and the highest 104.4°. Only one case did not have a temperature above 102° at some time during the course.

TABLE III

4 Boys Who Developed Rash in Less Than 7 Days After Inoculation

No.	Initials	Age	Admitted	Discharged	Days lost	Days elapsing between inoculation and rash	Source of blood	Highest temp.	Days of fever	Complications
16	A. W. W.	16	2/5	2/18	13	4	J. I. P.	103.8	7	None
19	F. P.	18	2/6	2/20	14	6	J. I. P.	104.0	7	None
25	G. H. H.	18	2/7	2/19	12	6	J. I. P.	102.6	6	None
34	J. F.	17	2/8	2/19	11	6	J. I. P.	102.4	5	None

Average duration of febrile period = 6.25 days
Average maximum temperature = 103.2°
Average loss of time = 12.5 days

B. The group of six who received inoculations with blood from an adult who had measles twenty years previously showed:

1. An average duration of the febrile period of 5.16 days.
2. An average maximum temperature of 103.6°.
3. An average stay in the Infirmary of 12.0 days.
4. One case of double otitis media, caused by a staphylococcus aureus.

The shortest febrile period was three days, and the longest seven days, the lowest maximum temperature 102.6°, and the highest 104.6°.

C. The group of four who received inoculations with convalescent blood, but who developed a measles rash within a week of the date of inoculation showed:

1. An average duration of the febrile period of 6.25 days.
2. An average maximum temperature of 103.2.
3. An average stay in the Infirmary of 12.5 days.
4. No complications.

The shortest duration of the febrile period was five days, and the longest seven days. The lowest maximum temperature was 102.4, and the highest 104.0. In these cases the blood appeared to have had no effect.

D. The group of thirty-two who received inoculations with convalescent blood at least eight days before the development of the rash, and therefore either in the first week of the incubation period or else before the date of infection showed:

1. An average duration of the febrile period of 3.66 days.
2. An average maximum temperature of 102.5°.
3. An average stay in the Infirmary of 9.7 days.
4. No complications.

The shortest duration of the febrile period was one day, and the longest seven days. Twelve cases had fever on only one or two days. The lowest maximum temperature was 100.2°, and the highest 104.4°. In eight cases the temperature did not go over 102 at any time, and in five cases not over 100.4°.

If we separate this group of thirty-two according to the source of the convalescent blood, there appears to be a slight difference in the efficacy. Fourteen who received blood from E.E.W. showed an average febrile period of 4.43 days, while fifteen who received blood from G.H.H. showed an average duration of the febrile period of only 2.93 days, and three boys who received blood from J.I.P. showed an average duration of 3.6 days. None of those who received blood from G.H.H. had fever on more than five days, whereas among those receiving blood from E.E.W., four had fever lasting six days, and one seven days. The only explanation of this condition seems to be that in the case of E.E.W. the blood was probably drawn before the maximum development of the antibodies.

The mild character of some of the cases was very striking. The rash was often very sparse, and would hardly be recognized as measles except in the presence of an epidemic. In many cases catarrhal symptoms were almost entirely absent, and in two cases Koplik's spots could not be found in the mouth, although the other features in these cases left no doubt as to the diagnosis. In several cases the boys did not feel ill in the slightest degree, but simply reported because of the development of a skin eruption. When these cases were put to bed, however, fever was always found on one or two days. The blood appeared to have beneficial effects whether it was given as late as the sixth day after exposure as in Case 17, or as early as twelve days before exposure as in Case 63.

TABLE IV

32 Boys Who Received Inoculation at Least 8 Days Before Rash

No.	Initials	Age	Admitted	Discharged	Days lost	Days elapsing between inoculation and rash	Source of blood	Highest temp.	Days of fever	Complications
12	T. M.	13	2/5	2/15	10	10	E. E. W.	103.4	5	None
13	H. W. H.	16	2/5	2/17	12	10	G. H. H.	102.2	5	None
17	C. M.	14	2/6	2/15	9	8	G. H. H.	100.4	2	None
18	J. W. O.	17	2/6	2/17	11	12	G. H. H.	103.4	5	None
20	E. B. H.	14	2/6	2/22	16	15	E. E. W.	103.0	7	None
22	J. R. H.	17	2/7	2/20	13	16	E. E. W.	103.6	6	None
23	J. N. C.	17	2/7	2/17	10	11	G. H. H.	104.4	4	None
26	C. G. M.	13	2/7	2/17	10	9	G. H. H.	101.4	3	None
29	D. T. D.	14	2/8	2/17	9	12	E. E. W.	103.2	4	None
32	H. C.	16	2/8	2/17	9	12	G. H. H.	103.0	2	None
33	G. Q. T.	15	2/8	2/17	9	13	E. E. W.	102.2	2	None
36	A. L. A.	15	2/9	2/17	8	15	E. E. W.	102.4	2	None
37	H. I. N.	17	2/9	2/17	8	11	G. H. H.	100.4	2	None
38	P. C.	16	2/9	2/19	10	13	G. H. H.	102.4	4	None
40	N. B.	13	2/10	2/18	8	14	E. E. W.	103.2	2	None
41	P. T. C.	13	2/10	2/18	8	12	G. H. H.	100.4	2	None
42	G. V. C., Jr.	15	2/10	2/19	9	15	E. E. W.	103.2	3	None
43	T. W.	15	2/10	2/19	9	15	E. E. W.	103.0	4	None
44	F. F. H.	16	2/11	2/19	8	14	G. H. H.	101.4	2	None
45	W. W. H.	17	2/12	2/22	10	9	J. I. P.	103.0	4	None
46	A. D. R.	15	2/13	2/25	12	21	E. E. W.	104.0	6	None
47	F. M. P.	16	2/14	2/24	10	19	G. H. H.	101.6	4	None
48	H. S. W.	13	2/15	2/25	11	15	E. E. W.	102.2	6	None
52	G. B. S.	18	2/16	2/24	8	12	J. I. P.	103.4	2	None
53	J. N. M. H.	13	2/16	2/27	11	14	J. I. P.	102.4	5	None
54	D. W.	15	2/17	3/1	12	24	E. E. W.	102.8	6	None
55	A. B. E.	15	2/18	2/28	10	24	E. E. W.	103.4	4	None
56	D. E. S.	16	2/18	3/1	11	23	E. E. W.	104.2	5	None
57	H. R. C.	14	2/19	3/2	11	24	G. H. H.	102.6	5	None
60	S. W. M.	13	2/21	2/27	6	23	G. H. H.	103.2	1	None
62	S. F.	14	2/22	3/2	8	24	G. H. H.	100.4	2	None
63	C. B. B.	18	2/24	2/28	4	26	G. H. H.	100.2	1	None

Average duration of febrile period = 3.66 days
Average maximum temperature = 102.5°
Average loss of time = 9.7 days

No ill effects of the inoculation were noted in any case. There were no febrile reactions following the inoculation, and the only immediate effect seemed to be local soreness for 24 or 48 hours at the site of injection.

SUMMARY

1. The use of prophylactic measures in an epidemic of 63 cases of measles in a boarding school of 400 boys is described.

2. In a dosage of 20 cc., blood from an adult who had measles twenty years previously seemed to have no effect either in preventing or modifying the disease.

3. Blood from convalescents in a dosage of 9 cc. of whole blood (5-5½ cc. serum) had little or no effect in preventing infection, but influenced markedly the course of the disease when it was given before the end of the first week of the incubation period.

4. Thirty-two cases who received convalescent blood at least eight days before the development of the rash showed an average duration of the febrile period of 3.66 days, whereas 21 boys who received no inoculation showed an average duration of the febrile period of 6.45 days.

5. The average maximum temperature of the 32 who received convalescent blood at least eight days before the development of the rash was 102.5°, whereas the average maximum temperature of the 21 who received no inoculation was 103.5°.

6. The average stay in the Infirmary of the

32 inoculated boys was 9.7 days, whereas the average stay of the control group was 13.0 days

7. No complications whatever occurred in the inoculated group of 32, whereas in the control group of 21 there was one case of bronchopneumonia, one of otitis media, one of frontal sinusitis, and one of external otitis.

8. The mild character of the disease in many of the boys who received inoculations was very striking.

9. The inoculations had no ill effects whatever.

10. Beneficial effects were obtained whether the blood was administered as late as 6 days after exposure or as early as twelve days before the probable date of infection.

SYPHILIS OF THE BLADDER

BY AUGUSTUS RILEY, M.D.

SYPHILIS of the urinary bladder is not so common as might be expected among the great number of men and women who are found to be syphilitics. Such lesions, suspected or detected by those doing urology, are the late lesions of syphilis, tertiary or gumma. Some writers report finding secondary lesions of the bladder during the stage of secondary lesions of the body surface and mucous patches of the mouth and throat. As a rule patients with secondary syphilis do not complain of any urinary symptoms, which would lead the examiner to suspect any bladder lesions. A cystoscopic examination would be necessary to establish a suspected lesion as such. I do not favor a cystoscopic examination of a patient with secondary syphilis, because of the great danger of passing the infection to the examiner or his assistants.

Loyd Thompson (1920) making an extensive review, found the literature on bladder syphilis "very meager", and he quoted some authors as saying, "Syphilis affections of the bladder are extremely rare". He reports eighty-four cases in all. Fifty-eight of these cases he accepts as most likely to be syphilis of the bladder. Some of these cases are cited by the authors as syphilis because at the time of an operation or a post-mortem examination the patients showed, what was thought to be syphilitic lesions in other parts of the body.

Corbus (1920) reports and describes a case of "Condylomata of Bladder". The growth found in the bladder so resembled a papillomatous growth, that the patient was operated upon and the growth treated as a Papilloma. A blood examination made later gave a Positive Wassermann. The patient had lost a great deal of weight, but showed a marked improvement and a gain in weight after having had anti-syphilitic treatment.

Windell (1924) making a review of all cases he could find reported up to that time, found less than one hundred cases. The diagnosis of the earliest reported cases, was made from the fact that bladder symptoms were relieved or completely disappeared after a course of anti-syphilitic treatment. The other cases were suspected as syphilis from the findings made at the time of a cystoscopic examination and a blood examination giving a Positive Wassermann. These cases proved to be syphilis by the disappearance of the bladder symptoms after a course of anti-syphilitic treatment, and by not showing any lesion on later cystoscopic examination.

Peterson, A. (1924) reports and describes the findings of two cases of bladder syphilis.

The tertiary lesions of the bladder are not so typical of themselves that one can say at the time of a cystoscopic examination, "This is Syphilis of the Bladder", as he would or could say, "This is a Papilloma", or "This is Cancer", if either growth was found. The patient's symptoms are the symptoms of one, who may be suffering from a papilloma, cancer or tuberculosis of the bladder. A foreign body causing a cystitis, more or less severe, or a severe cystitis from any cause may give symptoms, that may prove to be tertiary syphilis of the bladder. A cystoscopic examination is made and a lesion is found. The lesion is not typical of anything special. It is not the picture of a papilloma, cancer, tuberculosis or ulcerative cystitis. The lesion may be one of tertiary syphilis, but it has to be proven so by a Positive Wassermann, a relief or complete disappearance of the urinary symptoms, and a complete healing of the lesion, after a course of anti-syphilitic treatment. The healing of the lesion is found as such by a later cystoscopic examination. "There is nothing typical of bladder syphilis".

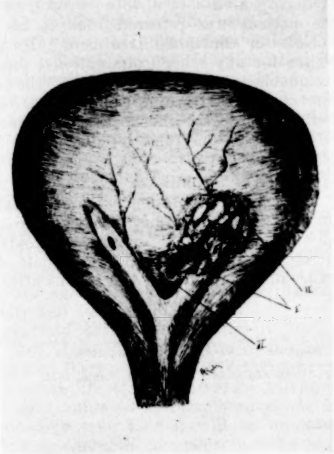
There may or may not be a history of a primary syphilitic sore. The patient never thinks his present condition has any connections with the penile sore, which he had several years before.

Symptoms: (1) Frequency and painful micturition are the patient's first complaints. They may cause him to consult his family physician, and is treated for his cystitis.

(2) Haematuria is a later but prominent symptom in all cases reported. There may be a blood-tinged urine or a terminal haematuria. Some patients will pass clots of blood at times and have a continued haematuria. This constant bloody urine is due to accumulated blood clots. Haematuria is the symptom that causes the patient to consult a urological clinic.

Site of Lesion: The most common site of a tertiary lesion of the urinary bladder is the area of the trigone, near one or the other ureteral orifices.

During the past four years I have found three cases with lesions of the bladder, which were thought to be syphilis. The cystoscopic examination showed an area of marked somewhat bullous oedema of the trigone near one or the other ureteral orifice. Two of these cases had the lesion nearest the left ureteral orifice and one had the lesion nearest the right ureteral orifice. In the middle of this oedematous area was a large, flat, red ulcerated area, which was surrounded by smaller ulcerated areas. The surface of these ulcers were below the level of the oedema. These ulcerated areas bled freely when touched with the end of the cystoscope, or the tip of the ureteral catheter. All three of these cases gave a Positive Wassermann.



CASE I. Sketch of bladder showing (I) Ulcerated Areas, (II) Area of Oedema.

One of these patients refused anti-syphilitic treatment: therefore he can not be called definitely one with syphilis of the bladder. But the lesion found was so similar to the lesions found in the other two cases, I feel that it was syphilis and that it would have responded to anti-syphilitic treatment.

The other two cases I wish to report in more detail. They were put through a course of anti-syphilitic treatment and were entirely relieved, first of the haematuria and later of the other bladder symptoms. I was able to cystoscope one of the cases later and found the lesions entirely healed.

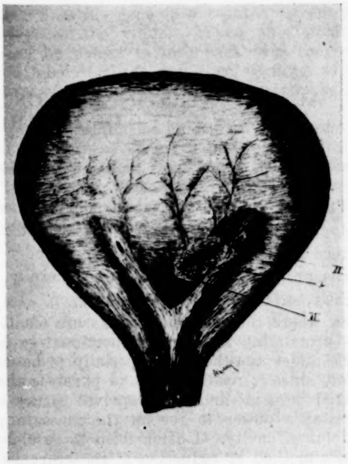
Case I. Widower. Age 34 years. Gonorrhea 1908. Denies penile sore. Operation, "Strictured Urethra and Perineal Abscess" 1918.

Complains of frequent and painful micturition, nocturia several times, slow stream, and pain in left back, pain radiates down into left groin. He has passed bloody urine with clots for the past three months, has lost a great deal of weight.

A pale and poorly nourished man. Urine bloody and full of small blood clots. Instrumentation of the urethra found it strictured in its deeper portion. Urethra was very sensitive and had to be anaesthetized with 4% alypin before an instrument could be passed. Bougie No. 16 was passed at this time and no other instrumentation was done because of bleeding from the urethra. Ten days later, with the aid of 4% alypin, sounds up to No. 22 were passed with some bleeding. The bleeding after each instrumentation was easily controlled with a hot urethral irrigation. After another ten days sounds up to No. 26 were passed and a cystoscopic examination was done.

The bladder capacity was very small; three ounces of irrigating fluid caused a great deal of pain. Many small but old blood clots were washed out of the bladder through the cystoscope sheath.

The cystoscopic findings were as follows: The whole trigonal area was very red. The right ureteral orifice was seen and apparently was functioning normally. On the left side of the bladder, where one would expect to find the left ureteral orifice, there is an area of much oedema, bullous in appearance. In this oedematous area were one large and several small ulcerated areas. These ulcerated areas were very red, flattened and appeared below the surface of the oedema. The ulcers bled very freely. The left ureteral orifice was not seen.



CASE II. Sketch of bladder showing (I) Ulcerated Area, (II) Area of Oedema.

The diagnosis from cystoscopic examination alone in this case was difficult. A blood examination gave a Positive Wassermann. The patient was put on anti-syphilitic treatment. After four weeks of treatment the patient's urine was turbid but showed no blood. He was entirely free of pain in his left back and groin. Cystoscopic examination made at this time showed the oedema to be much less and the ulcers healed. The left ureteral orifice was seen to function and was catherized, obtaining a turbid urine.

Three months later another cystoscopic examination was made. The cystoscopic picture of the former examination was entirely changed; the oedema had disappeared entirely and the ulcers were completely healed. There was a definite scar at the site of the larger ulcer. Both ureters could be easily catherized.

The probable diagnosis of syphilis of the bladder in this case was made more certain by a Positive Wassermann, the absolute disappearance of his symptoms and the complete healing of the lesions under anti-syphilitic treatment.

CASE II. Man, 58 years old. He had a penile sore 25 years ago. About one year ago he began to have frequent and painful micturition and nocturia 5-6 times. About six months later he noticed for the first time a bloody urine; after that time he would have an occasional bloody urine, lasting about 2-3 days. His haematuria became more frequent and the urine would contain some clots.

A cystoscopic examination showed the whole floor of the bladder to be redder than normal. The right ureteral orifice was seen to function in a normal manner. The left side of the trigonal area near the left ureteral orifice presented an oedematous appearance. In this oedematous area was a flat, elongated ulcerated area, the edges of which were below the surface of the oedema. A flat, more or less clean-cut ulcer, situated in a circumscribed area of oedema, was not typical of any definite lesion. The blood examination gave a Positive Wassermann.

Anti-syphilitic treatment was given. After three intravenous Neo-Salvarsans the haematuria disappeared.

The patient was referred back to his local physician for continued treatment. He failed to return for any other examinations; therefore I was unable to verify the healing of the lesions by the needed cystoscopic examination. But I feel in this case the therapeutic test warrants the diagnosis as one of "Syphilis of the Bladder".

Conclusion: Syphilis of the bladder is not very common. The lesion is not typical. A definite diagnosis can not be made from the lesion's appearance. The diagnosis is made only after therapeutic tests and a complete disappearance of the symptoms and lesions after such tests.

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ACTIVE INTESTINAL PERISTALSIS AS AN AID IN THE REDUCTION OF INCARCERATED HERNIAS

BY HERMAN B. SHEFFIELD, M.D.

THE treatment of incarcerated hernia has not changed for a great many years. Failing to reduce the hernia by means of taxis under morphine or general anesthesia, we generally, and rightly, refer the case to the surgeon. In children where the abdominal rings are small and the protruding intestine proportionately large, taxis under anesthesia is especially to be deprecated, since it readily tends to paralyse the impacted intestine and thus deprives nature of its peristaltic power to retract the mass into the abdominal cavity. I often tried to emulate nature's method of reduction of incarcerated hernia by inducing active vomiting, i. e., active reverse peristalsis, and not rarely obtained very prompt results. However, in studying these cases it frequently occurred to me that some other way ought to be found which would produce better results without the depression that usually accompanies violent vomiting. After considerable experimentation, I found the following procedure eminently successful in the majority of cases of hernia impending strangulation: The patient is put in recumbent posture with the legs flexed; while the physician endeavors gently but steadily to replace the hernial contents into the abdominal cavity, the patient is directed to swallow mouthfuls of cold water (the colder, the better), which promptly incites active normal intestinal peristalsis. The effect is often almost marvelous—the firmly impacted, totally immobile, apparently lifeless mass, as if by magic, perceptibly begins to gurgle, and gradually, nay, often suddenly, vanishes from the operator's manipulating fingers. It is obvious, of course, that this procedure is not claimed to be a panacea in all cases of incarcerated hernia, but having again and again succeeded in reducing acute hernias, which seemed so near permanent strangulation, by this simple means, I take the liberty of submitting it to the consideration of the general practitioner.

ADDRESS AT DEDICATION OF LAKEVILLE STATE SANATORIUM FOR THE CARE OF NON-PULMONARY TUBERCULOSIS

BY HIS EXCELLENCY ALVAN T. FULLER, GOVERNOR OF THE COMMONWEALTH OF MASSACHUSETTS

THIS is a memorable occasion that has brought us to the Lakeville State Sanatorium today. I am very happy that the privilege is mine to represent the Commonwealth on this occasion. I wish that all the duties of the Governorship were as pleasant and inspiring as this one. To open an institution for the care of a sorely neglected group of tuberculous patients is a glorious accomplishment. Massachusetts has a splendid heritage in providing service in this disease and it is therefore fitting that she should be the first of the States to open an institution exclusively for this type of case; for those afflicted with tuberculosis elsewhere than in the lung. This undertaking will surely contribute toward the world-wide battle against tuberculosis, the results of which are found in the spectacularly falling death rate from this disease. Over 16,000 people would have died last year in Massachusetts had the death rate of 50 years ago prevailed, while the figure was actually less than 4,000.

I am told that the reduction in the death rate was most striking between the ages of fifteen and forty,—undoubtedly the most useful years in the life of the individual and when he is of most value to the community. It is unquestionably true that it will be necessary to conduct an energetic campaign in order to maintain this present rate of reduction.

It is most heartening to consider the many factors that have contributed toward it. During the last generation our attention has been focussed on earlier and earlier stages of the disease, as our ability to care for the advanced states has improved and as medical knowledge has progressed, until now we are actually examining the children in our schools for the relatively small group that are infected and for the much larger group that, with improved hygiene, may be removed from the ranks that will furnish the adult cases in the years to come. The whole field of child hygiene, and adult hygiene for that matter, is then within the scope of comprehensive tuberculosis prevention. This being the case it may not be amiss to consider briefly the aims and accomplishments of preventive medicine and hygiene.

It has been well said that the objectives of hygiene are to make growth more nearly perfect, decay less rapid, life more vigorous, and death more remote. Could any objective be more worthy of the united efforts of all mankind and more inspiring? Have we progressed toward this objective? The life of the average citizen in Massachusetts is fifteen years longer than it was twenty years ago. Nearly 13,000 persons are alive today that would have died last year of communicable diseases had conditions prevailed as in 1905. The greatest saving has been in children under three years of age. In this group the deaths have been more than halved in a generation. A stupendous humanitarian and economic saving! Preventable deaths among expectant mothers are attracting more and more attention. The toll is still impressively tragic. Education in this connection is being promoted.

You may contrast with this the dark picture of the mounting deaths from heart disease, cancer, diabetes and the other wear and tear diseases of late middle life. But science has recently given us insulin for diabetes and who will dare to say that she has not more lavish gifts for the future? Saint Paul said, "Faith is the substance of things hoped for, the evidence of things not seen." But it is equally true that faith without works accomplishes little.

Then, too, the public and the medical profession are being roused to preventive possibilities that lie in periodic physical examinations of the supposedly well. Though the answer to many of these scourges of mankind is not *yet*, the whole atmosphere is charged with hope rather than despair.

As in any ascent from the dark valley, the climber fixes his eyes on a point apparently at the top of the ridge. When this point is reached he pauses to look back over the scene of his labored climb and then turning with a mixture of feelings views the far greater heights that challenge him above.

The story is told of an Indian Chief who desired to test the strength and prowess of his braves, so he called four of the young men of his tribe to him and said to them, "Run as far as you can up yonder mountain and then come back and tell me what you have seen." They started out and in the afternoon one of the braves returned bearing a twig of spruce. Later in the afternoon the second returned bearing a sprig of pine which he had brought from the foot of the mountain. Early in the evening the third warrior returned with an alpine flower which he had plucked far up the mountainside. But it was late in the evening and the moon was high in the heavens when the last one returned, his hands and feet scratched and bleeding, and he said to the Chief, "I bring you no spruce or pine, no alpine flower, but I ran to the top of yonder mountain, and," with a light in his eye, he exclaimed, "I saw the sea!"

So we today have glanced back over the steep path of health preservation that has been traveled. After pausing for breath let us consecrate ourselves to the end that nothing which has been so dearly won shall be lost and that we will conquer the towering heights of disease that still overshadow us as rapidly as sound knowledge of these matters will permit.

THE SERVICE AVAILABLE AT LAKEVILLE*

BY LEON A. ALLEY, M.D.

In 1916, as authorized by the Resolves of that year, an investigation was made of the matter of non-pulmonary tuberculosis by the Department of Public Health with special reference to children and adolescents throughout the Commonwealth.

In part the conclusions resulting from this investigation were:—that the actual need for special institutions for the treatment of cases of non-pulmonary tuberculosis was not at that time recognized by the majority of the medical profession.

That general use was not being made of the already available beds in existing institutions.

In view of the fact that the number of available beds for pulmonary tuberculosis cases was to be increased by over 900 beds within the next two years, when the cities of over 50,000 population carried out their contemplated plans, and the County Commissioners discharged the duties imposed upon them by the Legislature of 1916, it was felt that the completion of those hospitals would give the opportunity so much needed, for the segregation of different classes of tuberculosis cases, which segregation would undoubtedly have some bearing on the subject of a special institution,—and therefore until such time as the whole work for tuberculosis cases in general had adjusted itself to the increased facilities that the next two years would furnish it would not be advisable to consider the building and organizing of any new institutions for the non-pulmonary tuberculosis cases.

The report of the investigation mentioned above practically advised no legislation, as it was hoped that existing institutions might be developed to meet the needs of the communities. communities.

The Legislature of 1922 passed a Resolve directing the State Department of Public Health to investigate the feasibility of providing new or additional hospital accommodations for the treatment of surgical or non-pulmonary tuberculosis. The intervening time, since the investigation in 1916, had shown some improvement in the facilities for caring for this class of cases in the General Hospitals, but not enough to meet the general demands of the public.

General hospitals were treating a large number of these cases in institutions. A larger number were being treated in the out-patient departments that had not been institutionalized. Massachusetts had no institution, either public or private, devoted especially to this class of cases.

The State Sanatoria would take no cases unless complicated with pulmonary lesion, and were not equipped with apparatus or personnel to properly care for them if they did.

Various institutions in other states were visited. The John N. Adam Memorial Hospital in Perrysburg, New York, established and maintained by the City of Buffalo was found to be especially well equipped for the care and treatment of cases of non-pulmonary tuberculosis. Since its beginning in 1913, that institution had been following closely the lines of treatment with heliotherapy practiced by Rollier in Switzerland. Very encouraging results were shown and the work was meeting with the hearty approval of the patients and the community.

The subject of non-pulmonary tuberculosis being a very different one from that of pulmonary tuberculosis, it was found that general practitioners were treating the various types in one way, the orthopedic surgeons in another way, and even among orthopedists there was and still is considerable diversity of opinion.

The Sanatorium at Rutland was originally built as a demonstration, that under proper treatment a case of pulmonary tuberculosis was not as hopeless as was at that time generally considered. This quickly brought about a change of treatment and a reversal of public opinion. In consequence a much larger number of the pulmonary type of case are brought under treatment before the disease is too far advanced for them to receive great benefit, if not an absolute cure.

The Department believed that a similar institution, properly equipped, would work for equal benefit to those suffering from non-pulmonary tuberculosis. This class of case is not as fatal as the pulmonary form but it produces disfigurements and deformities that handicap, if they do not entirely destroy, the efficiency of the individual.

Because of the large number of cases of non-pulmonary tuberculosis treated in the general hospitals they were allowed to remain but a short time. In that length of time these patients were unable to obtain the general sanitary and other special treatment known to be necessary for the complete recovery of any tuberculosis infection.

It was therefore recommended that an adequate and fully equipped institution for the treatment of non-pulmonary tuberculosis be provided in this State.

Dr. Horace LoGrasso, Superintendent of the John N. Adam Memorial Hospital at Perrysburg, New York, visited the various sanatoria in this State, and stated at that time, that in his opinion Lakeville was best suited because of its location and the arrangement of the present buildings to carry on the treatment of non-pulmonary cases with heliotherapy.

In accordance with the report and recommendations following this investigation the Legislature in 1924 authorized the Department of Public Health to admit to the Lakeville State Sanatorium persons suffering from extra-pulmonary tuberculosis, provided, that no person shall be admitted who has not been a resident of the Commonwealth for at least twelve months preceding the date of his application for admission and that preference shall be given citizens of the Commonwealth. This was approved June 5, 1924.

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*Address given at the dedication exercises of the Lakeville State Sanatorium, Middleboro, Mass., April 27, 1926.

The legislature that same year made an appropriation for the remodeling of an existing stable for the further accommodation of male employees. Work on this building was begun in September 1924 and completed early in January 1925, providing desirable quarters for 45 male employees in 15 single and 15 double rooms. Male employees were prior to the opening of this building housed in rooms or dormitories located in various buildings about the institution. These rooms and dormitories were needed in some instances for the use of patients, and in others for nurses' quarters. Because of the lack of proper housing conditions many day employees were hired at a much larger expense than they can now be hired for when maintenance is furnished by the institution.

In 1925 money was appropriated for the reconstruction of the North Pavilion and alterations on the Women's Building. The North Pavilion was formerly used by male patients suffering from pulmonary tuberculosis and has been remodeled into wards for children suffering from extra-pulmonary tuberculosis. The wards are on the first floor and rooms for women employees on the second. Work on this building was started in May 1925 and children were admitted in November 1925. Children have been admitted each week until that building is now full, and the overflow is being taken care of on the women's building. With the prompt filling to capacity of the children's building which provides for 50 beds and the continued demand for beds for children suffering from various forms of extra-pulmonary tuberculosis it will be, I believe, but a short time before another building will be necessary at this institution for children.

Work was begun on the Women's building in June 1925 and women were admitted in February of this year. This building provides accommodations on the first floor for 65 patients. On the second floor are comfortable rooms for 10 nurses. In this building a modern dental office has been provided. On February 1, 1926, Dr. John B. Lombard was appointed dentist to the institution and is in attendance on Monday and Thursday of each week. A complete oral examination is made soon after the admission of every patient and necessary prophylactic work, extractions and fillings done.

The principal new construction on both of the above-mentioned buildings consists on the southern exposure of reinforced concrete sun porches 16 feet wide which extend the entire length of the buildings. There is a cement parapet wall along the front 3 feet high on top of which is an 18" plate glass wind shield. As sun treatment can be carried on during the colder seasons of the year only when the patient can be protected from the winds these windshields are a very important feature of construction. One half of the porch adjacent to the building is covered by a Marquise roof. This type of roof is provided in order that the "air-cure" out of the sun's rays may be carried on and to permit free moving about of the beds unincumbered by posts. All locker and bath rooms had to be provided on one floor as many of these patients are unable and should not be allowed to go up and down stairs until about ready to leave the institution. Ramps were constructed to allow easy access in and out of the buildings for stretchers, wheel chairs and food conveyors. These buildings were of the rough shack type of construction and were not heated. They have been plastered and heating systems installed.

Beds with specially constructed strap springs which may be adjusted in four different positions to meet the demands for correct positions for rest and to correct deformities in cases suffering from tuberculosis of the spine, hip or knee are in use on each ward. These beds were made up with the head and foot of the same height to which are attached curtain rods to securely hold canvas curtains in place on one side and both ends which serve as an additional wind break which is so important in carrying out sun treatment on cold and windy days.

A new water supply for the sanatorium is under construction at Clear Pond, which is located approximately 4400 feet south west of the sanatorium. This work is being done under the supervision of the Division of Sanitary Engineering of the State Department of Public Health and should be completed this summer.

Alterations were begun on the Men's building in March and this building should be ready for occupancy again the latter part of the summer. The same general changes are planned for on this building as on the Women's building. It will accommodate 65 men when finished.

With the changing over of this Sanatorium from the treatment of pulmonary tuberculosis in adults to the treatment of extra-pulmonary tuberculosis in both sexes for all ages from two years up, the purchase of much new equipment has been necessary, more extensive laboratory facilities required and additional members to the medical staff. I wish at this time to state that I feel that the Commonwealth of Massachusetts, and especially the Lakeville State Sanatorium, has been very fortunate to obtain the services of Dr. Z. B. Adams as consulting orthopedic surgeon to this institution. Dr. Adams has for years been one of the strongest advocates for an institution of this kind to treat these so-called cases of Surgical Tuberculosis before and after operation if an operation is indicated as it unquestionably is in some cases. His assistance has been of great value during the past few months. His enthusiasm is an inspiration to all who come in contact with him.

Already the need of operating facilities has been felt. It has been necessary to send patients to other hospitals after a short course of treatment here for the correction of deformities which had occurred prior to their admission to this sanatorium. This works a hardship on the patient and is most unsatisfactory from a medical standpoint as heliotherapy should be continued after operation as well as before. This change from one hospital to another results in much time being lost both to the patient for the time to his recovery and to the State from an economic point of view. For this reason serious consideration should be given this coming year to the construction of a Central Medical Building, which would provide operating facilities, plaster room, adequate laboratories, x-ray, lamp treatment and isolation rooms. At the present time proper resources are lacking for the isolation of patients suffering from infectious diseases, should an epidemic break out, especially among the children. This Medical Building should be available in order that all phases of the treatment may be carried out before more beds are provided for a greater number of patients.

Any man, woman or child who has been a resident of this State for at least one year is eligible for treatment at this Institution if he or she is suffering from any form of tuberculosis as it affects the human body outside of the lungs. Patients suffering from active pulmonary tuberculosis cannot be admitted as it is not the function of this sanatorium to treat that type of case and beds are available for active pulmonary cases in other state, county and municipal hospitals.

Patients are admitted by the use of application blanks furnished by the State Department of Health properly filled out by the patient's attending physician and sent to the office of the Director of the Division of Tuberculosis, Room 6, State House, Boston, Massachusetts.

Patients coming to Middleboro by train should leave Boston from the South Station on the train leaving at 1.30 P. M. Arriving in Middleboro at 2.31 P. M. Patients are met at the station with suitable conveyances for transportation to the Sanatorium.

The prescribed rates of board for patients are as follows: Adults:—if paying their own board $7.00 per week. If the individual is unable to pay the same treatment is available and the board is paid by the city or town in which the patient has a legal settlement as determined by the State Department of Public Welfare. In such cases the rate is $16.10 per week. For children a flat rate of $7.00 per week is charged whether paid by the child's family or by a city or town.

Surgical dressings, plaster shells and casts, lamp treatments, x-ray photographs, laboratory work, dentistry, in fact all the various forms of apparatus and treatment which are considered necessary are provided by the State without extra cost to the individual.

Thus the State of Massachusetts has now provided an institution of the latest approved type of construction properly equipped for the exclusive care and treatment of patients suffering from any form of extra-pulmonary tuberculosis.

NON-PULMONARY TUBERCULOSIS AND THE PROFESSION*

BY JAMES S. STONE, M.D., F.A.C.S.

THE interest of the medical profession in surgical or non-pulmonary tuberculosis is twofold. We are concerned first with the prevention and second with the cure of the disease.

In both of these matters Massachusetts has taken an active leadership. It is to Dr. Theobald Smith, formerly connected with the Massachusetts State Board of Health and with the Harvard Medical School, that we owe our knowledge that there are the bovine and human types of tuberculosis and that the bovine type is the common cause of non-pulmonary human tuberculosis.

We know how the disease is spread from the infected cow chiefly through the milk. The tubercle bacilli may get into milk from the intestinal tract of the diseased cow through particles of manure, they may get into milk without demonstrable disease of the udder, but in the vast majority of cases they enter the milk directly from a diseased udder. The conditions are ideal for the cultivation of the bacilli. They thrive in a good culture medium and children drink them along with the milk. They gain entrance into the body through the tonsils or the adenoids or through the bowel. The original focus of disease which they produce may be trifling; a spot inside the tonsil, perhaps not as big as the head of a pin, or a tiny ulceration in the bowel. The extension of the disease beyond the original focus makes trouble. Usually the lymphatic glands are next involved. If the tonsils or adenoids are primarily involved the swelling of the glands in the neck is soon evident. The condition was formerly called scrofula. Many scarred necks attest the frequency of the disease.

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*Delivered at the dedication exercises of the Lakeville Sanatorium, April 27, 1926.

When primary in the bowel the glands situated deep in the body are involved. They are not as apparent as are those in the neck but either the glands or the primary focus in the bowel may lead to a tuberculous peritonitis, sometimes with the formation of a large amount of fluid, sometimes with the formation of an abscess, and sometimes with extensive matting together of the diseased bowels. Under these conditions the abdomen commonly increases in size while the general nutrition is greatly impaired.

The conditions mentioned are not, however, the most serious which may arise. From the glands the tubercle bacilli may be carried to other parts of the body. In children particularly, because of the peculiar arrangements provided for the growth of their skeletons, it is common to find involvement of the bones and joints. In the spine the disease causes a hump back. Hip disease, white swelling of the knee, diseases of the elbow, shoulder, ankle, wrist and fingers all bring their train of disabling and deforming symptoms.

Extension to the kidneys, the bladder and the urinary passages produces a distressing set of symptoms, ultimately proving fatal by the destruction of so much kidney substance as to interfere with proper elimination of waste products.

Still other organs may be involved, but the most serious danger is the spread of the disease to the coverings of the brain and spinal cord. Meningitis is a common and most distressing cause of death in many cases of tuberculosis of any form.

Thus medical science has shown the results of drinking tuberculous milk and it should be added eating ice cream, butter, cheese and any other product of tuberculous milk.

As a result of our present knowledge two steps have been taken to make our milk and meat supplies more safe. The Commonwealth and the United States are both working toward the elimination of tuberculosis among cattle. The goal is still far off but we are moving toward it. The other step is the widespread adoption of pasteurization, which if properly done kills the tubercle bacilli and other disease producing organisms. Milk has been the one staple article of food habitually eaten uncooked.

The results of better milk supply and of pasteurization have been most striking in cutting down non-pulmonary tuberculosis.

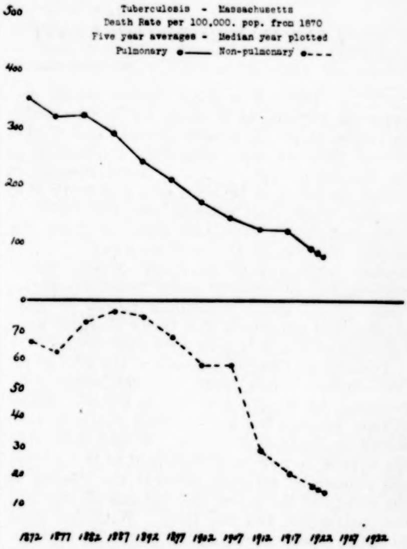
In 1872 the death rate from pulmonary tuberculosis was 350 per 100,000, while that from non-pulmonary was 67 per 100,000.

The decline of the death rate in pulmonary tuberculosis has been remarkably steady and should, if continued, reach the vanishing point by 1935.

The death rate from non-pulmonary tuberculosis remained practically stationary from 1872 until 1907. Since then it has dropped from 59 to 14 and should reach the vanishing point within a few years.

There is every reason to believe that better and pasteurized milk is the cause of this sudden improvement.

It is not too much to look forward with absolute confidence to the elimination of bovine and human tuberculosis. We know absolutely the methods by which this can be brought about. The question is one of demonstrating to the people the desirability of carrying out these methods. The goal cannot be reached as long as cows are "plugged"—as the expression is—to prevent detection of tuberculosis in the cattle market, and as long as proper pasteurization is neglected. The public must realize that the deaths of children from tuberculous meningitis and the crippling of children by bone and joint tuberculosis will cease when dishonest and careless preparation of milk ceases.



Until the goal is attained the treatment of those afflicted with non-pulmonary tuberculosis is essential. Here again Massachusetts has taken a leadership. The influence of Dr. E. H. Bradford in promoting the science of orthopedic surgery and in building up first the Industrial School for Crippled and Deformed Children and later the Massachusetts Hospital School in Canton has been of far-reaching importance.

Now, stimulated by the work of Rollier in Switzerland and its application in this country, Massachusetts is opening this hospital to cure non-pulmonary tuberculosis in its incipient stages. This hospital is intended to show what can be done right here at home by hygienic measures, by sunshine and fresh air and by other aids of medical and surgical science to arrest and cure non-pulmonary tuberculosis, just as our tuberculosis hospitals have shown what can be done in the cure of pulmonary tuberculosis.

The experience of this hospital will aid every other hospital and every physician in the Commonwealth. Thus we may look forward to the eradication of tuberculosis at a not far distant date and in the meantime to the prompt arrest of those forms of tuberculosis which in the past have caused such cripplings and deforming diseases and so many needless deaths.

LANDMARKS IN THE STATE'S CARE OF THE TUBERCULOUS*

BY VINCENT Y. BOWDITCH, M.D.

". . . There is a dread disease which prepares its victims, as it were, for death; which so refines it of its grosser aspect, and throws around familiar looks unearthly indications of the coming change; . . . a dread disease, in which the struggle between soul and body is so gradual, quiet, and solemn, and the result so sure, that day by day, and grain by grain, the mortal part wastes and withers away; . . . a disease which medicine never cured, wealth warded off, or poverty could boast exemption from . . . which sometimes moves in giant strides, and sometimes at a tardy sluggish pace, but *slow* or *quick, is ever sure and certain.*"

Thus wrote Charles Dickens in the 40's of the last century when, with his wonderful word painting, he vividly pictured in somber, almost gloomy phrases the approaching death of poor Smike in *Nicholas Nickelby*. Would that Dickens were alive now to be cognizant of the marvelous change of attitude towards the disease in the minds of the recent generations of the medical profession and the laity. With his usual words of cheer, how vividly would he have expressed the opposite picture of the return to health of many a sufferer who by our greater knowledge of prevention and cure has not been doomed to the tragic death of the poor boy whom he describes.

Just before I was asked by Dr. Bigelow to make this address, I happened to be reading *Nicholas Nickelby* for the third or fourth time in my life, and as I read the terribly solemn words, there came to me with a deep glow of satisfaction a realization of the wonderful advance that has been made in late years in grappling with the disease which for so long led the mortality list. So I have thought it well to quote Dickens' words to you today, trusting thereby to give you the same feeling that I experienced in reviewing what has already been accomplished combined with greater hope than ever for what may be done in the future.

In tracing the development of the anti-tuberculosis movement in Massachusetts I shall be obliged to repeat what to many is more than a twice-told tale; but repetition is often necessary to impress upon the public mind matters which to many are long known and accepted facts. I shall make, therefore, no apology for going over ground which I have traversed before.

In any treatise of this subject the names of Brehmer and Dettweiler in Germany and Trudeau in America must ever arise as pioneers in sanatorium treatment of tuberculosis. They set the example for others to follow. They had this special distinction in their work, that it had been thought necessary to send patients to at least fairly high, even mountainous altitudes in order to accomplish the desired result. Deeply impressed by their teachings, I had also imbibed in early years from my father, who had given special study to this disease, the necessity for life in the fresh air, avoidance of a damp soil, proper ventilation of houses, proper exercise and diet, as the best means of prevention or possible cure of the disease. With my mind filled with this teaching, and feeling convinced that much more could be done for the cure of the disease in our rigorous climate than had been thought possible before, I made an appeal to wealthy people in Boston, with the result that the Sharon Sanatorium, then a single building for eight patients, opened its doors in the winter of 1891, thirty-five years ago. Situated only 250 feet above sea-level, not far from the coast, the plan seemed to defy all the preconceived ideas of what was necessary to effect cures, and much skepticism was evinced as to any possible success. Not many years elapsed, however, before results were obtained which proved that the idea was by no means chimerical but, on the contrary, was proving that much more could be done for tuberculous patients near their homes than had been thought possible before.

The Sharon Sanatorium has long since enlarged its scope of work, and in recent years has added the so-called "Children's Pavilion," which combines the advantages of a sanatorium and an open-air school with graded instruction for children from six to fourteen years of age who have been exposed to tuberculosis and who in consequence of malnutrition and general debility are prone to develop disease later in life; the class of patients received being, as in the Women's Department, of the "middle economic group" who are unable to meet heavy expense but who are not classed among the very poor.

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*Address given at the dedication exercises of the Lakeville State Sanatorium, Middleboro, Mass., April 27, 1926.

It is not only a duty but a pleasure at this point to mention as I have on previous occasions the name of one well known to us all,—Alfred Worcester of Waltham. He it was who was among the very first to watch with sympathetic interest the work at Sharon, and to him should be given the large share of the credit of persuading the State authorities to establish the first State sanatorium in the Union, at Rutland, Mass., when he was a member of the Board of Trustees appointed to establish a State hospital for the consumptive poor in Massachusetts. Convinced of the success of the Sharon plan, he used all his energies to change the character of the hospital and to make it a sanatorium for the treatment and cure of pulmonary tuberculosis. In October 1898, therefore, the Rutland Sanatorium opened its doors, a model for others which soon began to spring up all over the United States.

It was at about this period that Dr. J. S. Millet of Brockton had begun to show the good effects to be obtained by open-air treatment even in the homes of workmen and women in that locality. Later the work of Dr. Joseph H. Pratt, Nathaniel Wood, and others, on the home treatment of patients began to show most favorable results, all proving that, although no one plan was a panacea it was not always necessary to send people far away in order to treat pulmonary disease successfully.

Time proved that other State sanatoria were needed in Massachusetts, and under the wise and efficient guidance of Dr. Arthur T. Cabot, Chairman of the Trustees of the Rutland Sanatorium, three other sanatoria, now all well known, were established at North Reading, Lakeville and Westfield for the benefit of residents in those sections of the State, the last named having been devoted at first to the care of women, but in later years solely to children.

Thus we can trace the growth of the sanatorium idea for meeting the tuberculosis problem up to the present time in Massachusetts Its success can be amply proven when one compares conditions now with those of more than a quarter of a century ago, since when the whole trend of mind has changed to one of hopefulness and courage as contrasted with the pessimism amounting in earlier days often to despair when a patient was stricken with tuberculosis.

Following the establishment of these four large State sanatoria, the necessity for local hospitals to take care of the far-advanced cases in cities and large towns became manifest. It would be impossible at this time to give detailed accounts of the various county and municipal hospitals which have been established in our state as a proof of the growth of the anti-tuberculosis movement in our communities. Suffice it to say, that throughout Massachusetts there is ample provision made for this class of patients who by reason of their enfeebled condition are enabled to be comparatively near their homes and families and at the same time receive necessary medical attention and care. The importance of such hospitals in removing possible sources of infection in homes and for the proper care of the patients themselves can hardly be over-estimated.

With the establishment of adequate facilities for treatment of early and even the more advanced cases of pulmonary disease, the necessity for institutions for the non-pulmonary forms of tuberculosis became manifest. We witness here today, therefore, another great step forward in Massachusetts by dedicating the Lakeville State Sanatorium to this purpose.

Hand in hand with these methods of meeting the tuberculosis problem has been the establishment of societies composed of the medical profession and the laity. The Boston Tuberculosis Association may be called the parent society of The Massachuetts Tuberculosis League and the subsequent local associations connected with the League which exist all over the State. The League has grown to be a powerful influence with its associate societies throughout Massachusetts in teaching the public not only how to cure disease but how to prevent it.

Having thus traced superficially the methods thus far adopted in our State, let us consider briefly what are the most desirable means of meeting our problems in the future. In my opinion, which I feel is shared by those who have studied the matter most carefully, we must adopt closer observation of under-developed, delicate children, especially those who have been exposed in their homes to tuberculosis, whether they show evidences or not of enlarged glands or hilum tuberculosis as revealed by the x-ray. Where active disease, whether pulmonary or otherwise, is present, sanatorium or hospital care is of paramount importance. The increasing number of so-called "Preventoria" for delicate children is an encouraging sign, and this gospel should be preached far and wide. There still exists in the minds of some people, who, although of restricted means, are yet accustomed to what we call the refinements of life, a shrinking from the idea of allowing their children to leave home, lest undesirable influences be brought to bear upon them. Such prejudice is quite natural at first thought, and in our experience at the Sharon Pavilion we have frequently come face to face with this attitude; but I can truly say that with the experiment once tried, we have had no exception to the proven rule of the groundlessness of their fears. From the parents of patients there has been nothing but enthusiastic approval of the results obtained in children whose previous delicacy, even ill-health, has been a source of great anxiety. Given the personnel of such an establishment to be of the proper sort, it is a marked exception to find a child who does not appear radiantly happy during his or her stay, and tributes are constantly received at Sharon from parents and guardians confirming this fact.

Dr. Chadwick at the Westfield State Sanatorium, now devoted to the care of tuberculous children only, has set the pace for others to follow. The Boston Tuberculosis Association has established and is still developing its admirable Prendergast Sanatorium for the benefit of the children of poor parents. The Children's Pavilion in connection with the Sharon Sanatorium, already mentioned, established seven years ago, has a capacity for twenty children from six to fourteen years of age, of both sexes. Other smaller private associations of similar nature are springing up in the state, some of them being available for the summer months only, but even with this somewhat limited scope, they have a marked beneficial influence upon the health and morale of the children sent to them. Open-air schools in various parts of the State are showing more and more their beneficial influence not only upon the general health of the children but upon their mental capacity in their studies.

President Charles W. Eliot, several years ago at a meeting composed of people who were chiefly interested in tuberculosis problems, made the remark that in the beginning of any endeavor to establish new methods of meeting some problems of public health interest, private enterprise was usually necessary at first, to prove or disprove the truth of any new idea before it is wise to place the project under public control. The truth and wisdom of this statement must be well known to all who have had experience in such matters. This brings me, in closing my remarks today, to the subject of paramount importance in our endeavor to lessen the ravages of tuberculosis. I refer to the aftercare of patients who, as far as the apparent arrest of the disease is concerned, have been successfully treated in sanatoria but who often are unable to return with safety to their former occupations and who still need supervision while adopting means of support under healthful conditions. For such, the establishment of industrial colonies, where not only former patients but their families can find useful and healthful occupations, is the next important step in our tuberculosis work. Dr. Allen K. Krause, now well known as one of our most brilliant writers and an ardent worker in this direction, has recently said, "I particularly emphasize the aftercare of the sanatorium patient, because that is the big gap in the whole tuberculosis problem and it must be solved in the near future." In this statement I thoroughly concur, and I wish to urge this upon my fellow-workers. We have now in New England an example of this progressive movement under the direct supervision of Bayard T. Crane, the Superintendent of the Central New England Sanatorium and Industrial Colony at Rutland, Mass. For several years now, Dr. Crane has been proving that patients of the type just mentioned can find useful and healthful occupations which have been successful not only as a means of preserving health but also as an economic measure. This institution in its recent new and beautiful situation at Rutland needs the interest and support of the laity as well as of the medical profession. Founded upon the same principle as that of the now famous Papworth Colony near Cambridge, England, under Dr. Varrier-Jones, there is every reason to know that with generous support this Industrial Colony, really the first of its name in this country, can, under the guidance of Dr. Crane, become as vital to the needs of our country as its now famous prototype. Recently the establishment of the "Potts Memorial" in New York State, and now in process of construction, is another encouraging sign of progress in this special feature of the anti-tuberculosis crusade.

At this time, I cannot give the details of the Industrial Colony at Rutland, which is supported by private subscriptions, but I wish to emphasize its importance and to urge its support not only in behalf of our own State, but as an example of what is necessary throughout the country. Massachusetts has always been in the vanguard in anti-tuberculosis work; I believe it will always be there. My hearty congratulations go to the State Department of Health for accomplishing this recent development of a place to take care of the non-pulmonary forms of tuberculosis. It makes another epoch in our State's effort to control what we have reason to hope will finally take its place among preventable diseases.

THE BROADENING OF THE TUBERCULOSIS PROGRAM*

BY LINSLY R. WILLIAMS, M.D.

THE earlier institutions for the care of tuberculosis were constructed primarily for the purpose of giving humanitarian care to those individuals who were not well cared for in the general wards of the public hospitals, and until the latter part of the Nineteenth Century there was no movement for the care of persons affected with this disease.

The first institution erected for the care of the tuberculous was the Channing Home for the treatment of women affected with tuberculosis. This home was opened in 1857.

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*Address given at the dedication exercises of the Lakeville State Sanatorium, Middleboro, Mass., April 27, 1926.

A private sanatorium was opened by Dr. Joseph Gleitzmann in Asheville, N. C., in 1875.

The Adirondack Cottage Sanatorium was opened by Trudeau in 1885.

There were the earlier voluntary efforts for caring for the tuberculous.

The prevention of tuberculosis was conceived of by various groups of physicians and the first voluntary association was created in Pennsylvania in 1892.

The first municipality to offer a hospital for consumptives was Cincinnati in 1897.

Legislation authorizing the construction of a state sanatorium was first enacted in 1895 followed by the opening of the Massachusetts state sanatorium in Rutland in 1898.

There were other hospitals and sanatoria built prior to 1904 but there was no central organization to push the development of facilities for the adequate care of the tuberculous until the creation of the National Association for the Study and Prevention of Tuberculosis, now the National Tuberculosis Association in 1904.

This voluntary association at first consisted of a small membership of physicians and laymen interested in tuberculosis. Its activities were few being limited by a very small income. The association was able, however, to organize the International Congress on Tuberculosis held in Washington in 1908. This was accomplished by a special committee under the leadership of Dr. Lawrence F. Flick of Philadelphia. A notable feature of the Congress was the large and successful exhibit. Subsequent to the Congress this exhibit was shown in nearly all of the larger cities and many of the smaller ones in the United States. This exhibit persuaded large numbers of persons of

The communicability of tuberculosis
The curability of tuberculosis
The importance of institutional care.

It also made easier the creation of various state and local associations which were organized by the National Association.

One of the most important addresses made at the Congress was one by Newsholme who pointed out the necessity of providing institutional care and insisted that such care played a most important part in the prevention of infection.

Many of the announcements made at the Congress and the reports of scientific work preceding it were in a large measure translated into policy. The association had urged for years the creation of an adequate number of hospitals. It has been suggested from time to time since the organization of the National Association that it or its affiliated associations should undertake the construction and maintenance of sanatoria as a major activity. The members of the Board of the National Tuberculosis Association have always been opposed to this policy and the Board has never been willing that any association should maintain an institution, except for a temporary period, for an institution once created it is very difficult to secure its transference to public administration. The average per capita cost for maintenance of public institutions is $2.75 and their yearly cost is nearly $68,000,000. This large cost for maintenance could hardly be met from private sources and fortunately are met by general taxation thus freeing the voluntary associations from this burden and permitting them to devote their energies to prevention rather than cure.

The voluntary state and local associations and their friends brought about the enactment of legislation first in 1908 in Ohio permitting the establishment of county institutions and it would not be extravagant to say that nearly all of the public sanatoria have been constructed as the result of the efforts of the state and local tuberculosis associations, the members of the National Tuberculosis Association and their friends.

Institutions, sanatoria, hospitals, preventoria were constructed subsequent to the legislative acts, but usually after educational campaigns and earnest efforts to convince local authority of the need and the necessity of spending public funds for the purpose.

Enormous progress has been made so that today we have a total of 67,270 beds maintained by the federal government, state and local authority and private associations.

Early in this campaign for hospital beds, as it was so termed, Biggs in New York urged that there be created at least as many beds for tuberculosis patients as there were tuberculosis deaths annually. This is commonly spoken of as the one to one ratio and this ratio has been nearly attained in a number of our states. That we are approaching this ratio is shown by the following table:

	Beds	Annual deaths
Massachusetts	3,251	3,513
New York	9,366	10,407
Connecticut	1,072	1,230
Michigan	2,142	2,966
And for the United States as a whole	67,270	Approx. 100,000

Classification of Beds

Federal Government — Veterans Bureau and the other services	12,184
State, County and Municipal	38,097
Semi-Private	11,647
Private	5,342
	67,270

Of these beds there are

1,281 in preventoria for children
343 for convalescent patients
848 for Indians and
707 for members of fraternal organizations
800 for surgical tuberculosis.

We pride ourselves upon being a nation and we discuss the terms of a national program, yet, as a matter of fact, the national program is only the sum of the component parts of programs applied in different states and localities. The program for the institutional care of tuberculosis has varied in different states. It has consisted chiefly of providing hospitals for advanced cases by county and municipalities, and for early cases a state sanatorium has frequently been constructed. It has always been urged by the National Tuberculosis Association that tuberculosis was a local problem and that it can only be treated locally and that in the states where the problem has been so treated the better results had been obtained.

In the earlier days of hospital and sanatorium construction it was assumed that sanatoria would be used for the treatment of early cases and that the hospitals would be used for the treatment of advanced cases. Human nature being as it is, it has been found difficult to refuse admission to an individual with a moderately advanced case, or a far advanced case with favorable symptoms to the sanatoria, and it has also been found that even in the hospitals constructed designedly for advanced cases that not infrequently earlier and more favorable cases were admitted. Ten years ago it was a matter of common comment that of the patients admitted to our sanatoria relatively few were in the earlier stages of the disease and it was hoped that as a result of educational propaganda, improved training of physicians and better methods of diagnosis by means of our case-finding machinery, that it would not be long before there would be a steady flow of early and presumably curable cases of tuberculosis in our sanatoria.

In a study recently made by Miss Alice M. Hill, of the staff of the National Tuberculosis Association, it was found that such was not the case. Twelve sanatoria were studied, three of which were state sanatoria, three county, three city and three private. These twelve institutions were situated in Michigan, North Carolina, Oregon, Kentucky, New Jersey, Ohio, District of Columbia, Massachusetts, Minnesota, Connecticut, Illinois, and Pennsylvania. Each of these institutions showed practically the same experience. In 1914 the percentage of patients affected with minimal tuberculosis was 10.9 per cent of the total; 28.0 per cent of the patients admitted were moderately advanced and 55.2 per cent far advanced. In 1924 some improvement had been shown—14.6 per cent were minimal, 27.6 per cent moderately advanced and 41.2 far advanced. One will immediately realize, however, that this story does not show the true picture for undoubtedly many of the moderately advanced and far advanced patients were not being admitted to the sanatorium for treatment for the first time. Many had been previously treated in the identical sanatorium. But it does clearly show one thing, that either patients are dilatory in presenting themselves for examination, or that physicians are negligent in not making a diagnosis early enough to send a patient to a sanatorium. Although progress has been made, it must be a matter of some disappointment to the managers and trustees of our sanatoria and to the resident physicians of these institutions, that it is extremely difficult to secure minimal cases suitable for curative treatment that give promise of complete arrest.

In 1913 a sub-committee of the National Tuberculosis Association investigated 25 different institutions created for the care of advanced cases of tuberculosis. This committee pointed out several definite factors which were responsible for the apparent satisfactory conditions which existed in those institutions. It pointed out that the tuberculosis hospital was the last resort for the advanced consumptive, that insufficient attention was paid to the care of the patient's family, a general lack of appreciation of the possibilities of treatment even in moderately advanced and far advanced cases, and in particular pointed out "discrepancy of aim and consequent lack of coöperation between the anti-tuberculosis organization, the tuberculosis dispensary, and the hospital for advanced cases"; "the absence in most communities of an agreed general scheme of institutional provision for those affected with tuberculosis". The committee found among other things that the length of stay of patients was limited, that patients kept coming and going, that the patients found discipline irksome, and that they could not obtain alcohol, or only with great difficulty, and that the medical and nursing care given was not sufficiently sympathetic or adequate to make patients feel comfortable and at home. Since this report was written changes have steadily taken place for the better, in the care of advanced cases. Relatively few new hospitals have been built for advanced cases alone and hospitals or infirmary units have been added to state sanatoria so that now the term "sanatorium" and "hospital" can hardly be dissociated, for a sanatorium is as much a hospital now, as a hospital is a sanatorium.

During and after the great war, efforts were made to bring about a provision for the adequate care of discharged tuberculosis veterans. Would that those in charge had been able to read, digest and assimilate the brief report just referred to. For all the evils found by the subcommittee in 1913 in our hospitals for advanced cases could have been anticipated in the hospitals of the Veterans Bureau and many of these evils recurred in our Veterans Bureau hospitals. And an especial evil is the necessity for centralization of authority and the centralization of institutions maintained by the Bureau in different sections of the country. On January 30, 1926, there were 11,151 beds being maintained by the Veterans Bureau and nearly ¼ of them vacant, 3,162, and we are even now confronted with two movements to build national sanatoria which offer far less prospect of success than do the hospitals of the Veterans Bureau which are established in various sections of the country. The difficulties of selection, transportation, discipline and follow-up after discharge present a problem so vast that it is practically impossible of solution. The National Tuberculosis Association has, therefore, opposed the idea of establishing any national sanatorium, whether organized by fraternal orders, voluntary associations, or by the United States Government itself.

Notable progress has also been made in the method of construction and in the general arrangement of buildings. The earlier buildings were largely of the shack type or temporary wooden construction. These were not fire-proof and fires have occurred, and such buildings would not be constructed today. These earlier institutions, however, filled their purpose, but unfortunately instead of an increasing number of early cases the demand was more and more for actual infirmary beds with a result that it has proved more economical to construct fire-proof buildings of more than one story. Sites are now better chosen for the purpose and buildings so arranged as to secure the maximum sunlight for patients, more economical cost of operation, and also for the more adequate care of patients.

The National Tuberculosis Association appreciated the need of rendering assistance to state and local authorities and also to private organizations in properly planning institutions. There was then created in the association an Institutional Advisory Service in 1919 which was maintained under the direction of Mr. T. B. Kidner until 1926. Under Mr. Kidner's leadership many advances were made in the construction of sanatoria. Insistence was made that all buildings for bed cases more than one story in height should be of fire-proof construction. It was also urged that careful attention should be given to the layout of buildings and that the site should be selected with due regard to accessibility, facility of transportation, accessibility of water, gas and electricity, as these were believed to be extremely important and that purity of air in a more remote situation was problematical and actually but little better than that found at a distance not far removed from the center of population.

It has been of material assistance to voluntary associations and architects interested in the construction of sanatoria to have made available for them pamphlets published by the National Tuberculosis Association including three monographs forming a part of our Technical Series—Selecting a Site for a Tuberculosis Sanatorium, Buildings for the Tuberculous Insane, and Planning a Tuberculosis Sanatorium. The Government report on the subject published by the U. S. Public Health Service was prepared by the Institutional Secretary. There are also numerous articles on the subject which have appeared in hospital and architectural magazines.

No attempt will be made to criticize medical service which in some places is not of the highest order due to the remoteness of the institution and the lack of association of the medical superintendent and staff with medical centers. This could to a large extent be obviated by the proper selection of the site, readily accessible to centers of population. This has been one of the chief errors in the past, the remoteness of the institution. Lack of careful study of a general layout and insufficient care taken in the details of construction have frequently rendered institutions more expensive to maintain and less adequate for the care of patients. Another feature which still needs improvement is the absence of complete coordination between hospital, sanatorium, dispensary, nursing service, health department and voluntary association. Continued efforts must be made to arrange for proper coordination of these facilities and cooperation of those responsible for their management. It is only too common that a patient discharged from an institution returns to his former home, or to a new home without the health authorities or voluntary association being notified, and the patient remaining without even the opportunity of securing medical advice until he has relapsed. This can be obviated by a proper follow-up system adopted by hospitals and sanatoria and by notifying the proper health authority of the community where the discharged patient has taken up his residence. Our populous counties should follow the example of England and arrange for a definite county tuberculosis scheme which actually does coördinate with the dispensary, the hospital, the health department and nursing service. We still need a considerable number of sanatoria for local centers of population and we do not need large sanatoria in a climatic center disposed to render service to all parts of the United States.

Massachusetts always a leader in the anti-tuberculosis movement, undertook years ago a program for construction of sanatoria by state, county and city, and has recently brought about a change in its policy by urging that special examinations be given to children who may be presumably infected with tuberculosis, if not definitely affected with the disease. Those interested in the program for the care of the tuberculous are watching the modifications of the Massachusetts program with the greatest interest. Time alone can only show the benefit to be obtained from this change. The creation of this new sanatorium is only an additional link in the chain which provides for the care and cure of the citizens of this state who should rejoice that it is their privilege to be citizens in a state which has for years held a far-sighted social viewpoint.

NON-PULMONARY TUBERCULOSIS AND THE PUBLIC*

BY KENDALL EMERSON, M.D., F.A.C.S.

Dr. Bigelow was most thoughtful in assigning to me so delightfully vague a topic as "Non-Pulmonary Tuberculosis and the Public." It precludes any chance of falling into the perils of statistical study and allows an opportunity to ramble along any one of the varied paths suggested by the title. Two questions only I ask. "What does the public know about non-pulmonary tuberculosis?" and "How should that knowledge be increased?" With your indulgence I will speak only of bone and joint tuberculosis, since it is that with which I am most familiar.

There is a little game to which the psychologist is addicted in moments of idleness and relaxation. It consists in his writing down a column of unrelated words leaving a space at the right where his opponent is expected to fill in the idea connoted by the key word, the process to take place within a time limit of a few seconds. Recently this little pastime was invoked to determine the mental age of some ten seniors at one of our universities. The shrewd psychologist introduced in his column the word, tuberculosis. Eight of the ten seniors jotted down the connotation "lungs." The ninth, being of a lugubrious temperament, wrote "death." The tenth, an incorrigible optimist, inscribed the word "sunshine." It is fair to infer that the tenth man was the only one of the group who had any personal knowledge of the meaning of the key word.

For our purpose the incident illustrates the fact that tuberculosis of the lungs so dominates the picture in this infection that non-pulmonary tuberculosis is a topic unfamiliar to the mind of the educated youth and probably also to a large share of the public of maturer years. I venture the opinion that a considerable number of college graduates when their eye falls upon a hunchback are unaware that at some earlier period the sufferer has been the victim of tubercular necrosis of the bodies of certain vertebrae.

The layman is peculiarly interested in medical news. This public interest is not surprising since God has given each a human body in which to dwell and the open season for attacks upon it by disease is perennial. Medical Society meetings are so well reported that the public is never in ignorance of the current trend of medical thought or of the subjects most engrossing medical attention at any given period.

In this connection it is interesting to turn back to the first volume of the Transactions of the American Orthopedic Society published in 1889. There are twenty-four leading articles by the masters of that branch of surgery. Ten of these papers deal with tuberculosis of joints. Now glance at the last number of the Journal of Bone and Joint Surgery, April, 1926. Again there are twenty-three articles, just one of which deals with tuberculosis, a paper by Rollier on the sunlight treatment of Pott's disease. Two interpretations may be put upon this contrast, first, the Orthopedic surgeon has enlarged his scope to such an extent that tuberculosis is a very minor part of his interest. Some say we treat everything save measles and alienation of the affections, and perhaps we dabble in the latter. The second possible interpretation is that tubercular joints are actually as well as relatively less common, a hopeful sign if we may believe this evidence. In either case the public is receiving little information about non-pulmonary tuberculosis through press reports.

Of course the reason for the apparent lack of intensive interest in non-pulmonary tuberculosis of this type on the part of physicians lies in the fact that the great masters of a generation and more ago so nearly solved the problem of treatment for us that other fields today present more tempting opportunities for research. The terrible deformities seen so frequently in the past are certainly less common, removing from public ken a potent educational influence. There is very little doubt that with the splendid preventive measures now in vogue the relative number of cases of bone tuberculosis in a given community has markedly diminished.

Paradoxical as the statement may seem it is possible that there is a certain menace in these apparently happy observations. The public forgets very easily. If you banish a malady from its immediate environment the dread of the disease itself quickly disappears. One hundred years ago during an epidemic of smallpox in Philadelphia one in seven of the inhabitants of the city died of the disease. Today so supercilious has our attitude toward it become that a little group of willful men can hold up necessary legislation for our protection against the possible recurrence of such a catastrophe. Fifty years ago malaria accounted for a devastating morbidity among the dwellers along the shores of the Hudson River. Who today feels the need of a quinine pill before taking the night boat from New York to Albany?

In answer to our first question, "What does the public know about non-pulmonary tuberculosis?" let us ask two others. Is there danger that public attention may wander too soon from the gravity of a situation that still exists? Is it possible that mothers may grow incautious and not seek early and persistent treatment for their children whose joints present incipient evidence of disease?

If these questions be answered in the affirmative, and I believe that they may be, our second query is before us. What educational measures are needed? We as medical men and as laymen acquainted with the dread menace of tuberculosis when it attacks growing joints have a clear duty to perform. It is for us to carry on the torch presented to us by the pioneers in the study of joint disease who blazed the trail for our modern successful methods of treatment. It is our continued and inflexible duty to preach to a forgetful public the need of a proper degree of solicitude in cases of suspected joints in children. The educational responsibility of the individual physician is not lessened by the establishment of a splendidly equipped institution like this which we have inspected today, but his burden is greatly lightened. For here we have an example to the public of accepted methods of treatment and a demonstration of the manner in which these methods should be carried out. In the results to be attained we have the necessary proof that these methods are correct.

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*Delivered at the dedication exercises of the Lakeville Sanatorium, April 27, 1926.

Here better than in the home we may employ the well tried measures, rest, nutrition, fresh air, sunshine, occupational therapy and time. And the greatest of these is time. It is appalling to parents to look forward to a year, two, three years of recumbent and protective treatment of an ailment which begins so modestly and appears as first so insignificant. Short cuts are tempting. Many of us remember the period of hip excisions, some of us have been guilty of undertaking that mutilating procedure and have witnessed the ensuing tragedies. It was an attempt to substitute speed for precision and it failed. Somewhere in medical history I recall an account of the French surgeon who placed a hunchback across two saw horses and jumped on his hyphosis. The operation was eminently successful, the hump disappeared completely, but a footnote records the immediate death of the patient.

The search for short cuts must not be abandoned where it is pursued along legitimate lines. But its effect on the public mind must not be forgotten. Until such methods are proved beyond peradventure they should not be used to tantalize a public notoriously impatient of prolonged convalescences. In speaking of the later operations recently developed to shorten recovery in cases of spinal disease I shall tread delicately. To criticize them may seem to imply over conservatism. Yet I have been a pioneer in a small way myself. I did the first case of tibial graft for spinal tuberculosis in my home city. This I say not boastingly but to forestall the charge of ultra conservatism, which has not been one of my mortal sins. Yet I look with scepticism on such short cut measures in the cure of tuberculosis of bone and joints. Nature helps us so much and a little added time is so slight a price to pay for safety that I must raise my small voice in protest against anything like a routine desertion of the well marked highways. There is no disease where the word treatment so aptly applies. It is our religion in handling joint tuberculosis. Unless you are ready to see to every detail, to spend hours in training nurses and mothers to be willing to supervise the procedure, even down to pinning the last safety pin, you are not giving these cases real treatment. Nowhere in medicine are unsuccessful short cuts more sure to lead to disaster.

This hospital is essentially a time hospital. It does not expect a turnover in ten days or a fortnight as is the average in general hospitals. You will have here wonderful opportunities to blaze safe new trails. You will never be behind in speeding up the processes when such a course is warranted by scientific study and experience. But you will never be stampeded into an effort to improve on Nature's kindly though procrastinating methods of effecting complete and permanent cures in the little bodies entrusted to your care while at the same time you are making ample provision for their expanding minds. You will have gone far in your duty toward educating the public when you have instilled into the mind of every mother the immortal doctrine of a great father of surgery, "I dress the wound, God heals it."

MEDICAL PROGRESS

PROGRESS IN THE STUDY AND TREATMENT OF CARDIOVASCULAR DISEASE IN 1925

(Continued from Volume 194, Number 18)

BY T. DUCKETT JONES*, M.D., AND HOWARD B. SPRAGUE, M.D.

VII. OTHER METHODS AND TESTS

"FUNCTIONAL Tests"—Hunt (*Guy's Hospital Report*, London 1925, 75:20) uses what is known as the "pulse-ratio" as a cardiac efficiency test. The pulse is taken with the subject at rest, and then continuously for two minutes directly after three minutes exercise. The total number of beats during the two minutes after exercise, divided by the pulse rate prior to exercise gives the pulse-ratio. A healthy well trained athlete stepping on and off a small stool 34.6 times per minute has a pulse ratio of 2.5, with which the abnormal patients can be compared. He grades his exercises in cardiac patients to keep them near this normal pulse-ratio. Ziskin (*Arch. Int. Med.* 1925, 35:259) believes that vital capacity is of value in the study of heart conditions, but he found no definite relationship between this test and cardiac efficiency in ambulant cardiac cases or the type of heart lesion.

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*Dalton Scholar, Massachusetts General Hospital, 1925-1926.

"Metabolism in Heart Disease"—Hamburger and Lev (*Amer. Heart Jour.* 1925, 1:240 and *Jour. Amer. Med. Assoc.* 1925, 84:587) have studied the metabolism in 17 cases of organic heart disease with decompensation, 13 showing an elevation above normal and 3 a decrease. The variations were from 11 to 66% with an average of 39%. The basal metabolic rate tends to go higher as decompensation becomes more pronounced, and decreases, even below normal, as compensation is established. Boothby and Willius (*Med. Clin. N. A.* 1925, 8:1171) draw similar conclusions from a study of 216 organic cardiac cases with decompensation, finding the level of metabolism slightly elevated above the Dubois standards more frequently than in normal subjects. They blame two factors: (1) Actual increase in muscular work required in labored respiration; and (2) frequently many have subjective sensation of distress with resultant nervousness and fear from the application of the mask or mouth-piece. They emphasize that some of these cases have adenomas of the thyroid, which would be overlooked but for the metabolic study. Boas and Shapiro (*Jour. Amer. Med. Assoc.* 1925, 84:1558) cite five cases all having high basal metabolic rates, with diastolic pressures persistently above 90 mm., cardiac hypertrophy, and no exophthalmic goitre. The authors suggest a special syndrome different from ordinary hypertension and exophthalmic goitre.

"Venous Pressure"—White, H. L. Barker, and Allen (*Amer. Heart Jour.* 1925, 1:160) attempted to show the departure from the normal of venous pressure response to exercise in relatively early myocardial involvement. Six cases are reported. Such a departure from the normal was found only in cases where cardiac involvement was obvious, slight degrees of involvement not being detected. Hélouin (*Presse Méd.* 1925, 33:1378) believes that venous pressure determination may help in diagnosis and treatment, since he found that a high venous hypertension indicated a sign of cardiac insufficiency; moderate venous hypertension indicated that the heart functioning was intact; normal venous tension with arterial hypertension was a sign of good compensation; and high venous tension with arterial hypertension testified to cardiac insufficiency.

"New Instruments"—Drury (*Heart,* 1925, 12:205) describes an apparatus for delivering rhythmic break shocks which automatically advance. It can also be used for quickly measuring the refractory period of muscle, driven at a given speed.

Jacobsohn (letter, *Jour. Amer. Med. Assoc.* 1925, 86:133) demonstrated a method of electrical amplification of the heart sounds in man, using as amplifers, the same cathode tubes ordinarily employed in radio apparatus. Broadcast from Berlin, the sounds were audible at Davos, Switzerland. The rhythm was clear, but not the more delicate heart sounds. Schwarz (*Deutsche Med. Wchnschr.* 1925, 1:777) reports only fair results in amplifying heart sounds with loud speakers. Apparently the electric stethoscope, as reported in this country last year, is superior to those in use on the continent.

"Miscellaneous"—Fossier (*Ann. Clin. Med.* 1925, 3:525) suggests that an accurate measure of the transverse diameter of the arch of the aorta is a line drawn from or near the mid-sternal line and ending approximately 0.5 cm. to the left of the left border of the sternum.

Burton--Opitz (*N. Y. State Jour. Med.* 1925, 25:18) describes his method of charting out the heart. By means of a blunt colored pencil, short vertical strokes are made from without inward, starting about three inches from the bell of the stethophone. As the pencil is moved inward a line will eventually be reached when the sound suddenly increases in its intensity. This is marked out, the bell moved to another spot, and the procedure repeated until the heart is entirely mapped out.

VIII. PROGNOSIS

That there are a few spontaneous and complete recoveries in the severer type of acute bacterial endocarditis, is emphasized by Libman (*Amer. Heart Jour.* 1925, 1:25). In the course of healing, the lesions of subacute bacterial endocarditis, so Libman thinks, play a role in the development of chronic valvular disease. Major (*Jour. Amer. Med.* 1925, 84:278) reports a case of recovery in this condition, the patient having been given gentian violet therapy. Blood culture was positive for streptococcus viridans prior to the injections, but have been negative since and the patient has been quite well for seven months. Biggs (*Arch. Int. Med.* 1925, 35:402) does not believe that the presence of bacteria in blood cultures always indicates a grave prognosis. Of 57 patients with subacute bacterial endocarditis, having positive blood cultures, 24 are living (too soon yet to draw any definite conclusions) and many of them seem to have recovered from the heart valve infection.

The progression of chronic valvular heart disease in 40 cases, followed from 3 to 6 years is reported by Smith (*Amer. Heart Jour.* 1925, 1:232). 13 died cardiac deaths during observation. 15 of the 27 still living have progressed definitely as determined by gradual increase in the size of the heart, intensity of murmurs, etc. Actual cardiac infection he found to be the cause of most of the progression, and rapid heart rate and slight temperature were often the only sign of activity.

Cowan and Bramwell (*Quart. Jour. Med.* 1925, 19:95) have followed up 24 cases showing electrocardiographic evidence of bundle branch block. 14 of the patients have died; 10 within one year, and 3 within 18 months after coming under observation. 7 of these cases died with progressive cardiac failure; 2 with acute "heart attacks"; and 5 from extracardiac causes. Of the remaining 10, one has been under observation 4 years, and 2 for more than 3 years. 7 are in quite good health, and able to carry on a fairly active life. In absence of cardiac insufficiency, they do not consider this as necessarily indicative of grave prognostic significance.

The after-histories of a group of 601 men, suffering from effort syndrome, is given by Grant (*Heart* 1925, 12:121) covering a period of 5 years. 15.3% recovered entirely; 17.8% improved, 56.2% remained stationary; while 3.2% became worse. Serious disease was present in 8.7%, the most frequent infection being pulmonary tuberculosis (22 cases). 2.3% died. 19.6% (118 cases) had previously had rheumatic fever or chorea. The incidence of definite cardiac disease for the whole group during the five year period was only 1%, from which he concludes that incipient cardiac disease cannot be regarded as the underlying cause of the effort syndrome, in more than a negligible proportion of cases. There was found no difference between the development of cardiac disease or in general health between those patients who presented normal signs and those showing apical or basal systolic murmurs, extrasystoles, etc.

Hahn, Herxheimer, and Brose (*Deutsche Med. Wchnschr.* 1925, 51:89) found no signs of injury, especially no arteriosclerosis, upon examining 50 men who had been prominent athletes. 28 of these were older than 45 years.

Ehrstrom (*Finska Läk-Sällsk. Handl.* 1925, 67:939) has re-examined 300 cases of hypertension analyzed in 1918. One group of 20 cases had been under observation from 10 to 16 years, with a blood pressure above 200 mm. of mercury, constantly or with brief exceptions. This group felt and looked well and were able to work most of the time. He found that the chances are about even as to whether or not a high blood pressure means a shortening of life. Unexpected remissions or long tolerance were frequently found, even with heart disease.

Maclachlan (*Amer. Jour. Med. Sci.* 1925, 179:856) finds that specific treatment for aortic syphilis, aside from usually giving symptomatic relief, may prolong life for a number of years, particularly where there is no involvement of the aortic valves, orifice or first inch and a half of the aorta.

IX. TREATMENT

1. Medical. a. Drug Therapy.

(1)—Pharmacological: Digitalis—Cushny and Yu (*Jour. Pharm. and Exper. Therap.* 1925, 26:1) report their observations concerning slowing and block in the heart under digitalis in animals. 24 dogs and 6 cats were used and the auricles and ventricles recorded independently by the myocardiograph. Slowing and block were found more frequently than in man, because in the latter the drug has often to be abandoned owing to its effects on other tissues. Animals vary in their response, apparently owing to varying susceptibility of the inhibitory cardiac center.

Berardi, Canan, and McGuigan (*Jour. Lab. and Clin. Med.* 1925, 10:661) suggest a new method for standardization of digitalis, based on a therapeutic standard with the use of dogs. With a single dog, without injuring him, one may closely approximate the strength of a given preparation, since 0.03 cc. per kilogram of a standard tincture will usually cause nausea and vomiting, and 0.01 cc. will cause considerable slowing of the heart rate.

Vanderhoof and Haskell (*Amer. Heart Jour.* 1925, 1:165) tested both old and fresh tinctures of digitalis on frogs, cats, and humans. In cats the fresh tincture was much more rapidly absorbed, in the ratio of 71 to 100. The drugs were then given to 10 healthy medical students, and the lowering of the T wave of the electrocardiogram observed. The final effect was: old tincture effect, 24.6%; fresh tincture effect, 33.7%; that is about the ratio of 71 to 100, which agreed with the frog and cat method figures. Thus there is a definite loss of absorbability with the passage of time, as tested by the lymph sac of the frog, the alimentary tract of the cat, and in the human subject. Reinhold (*Klin. Wchnschr.* 1925, 4:207) reports that in cats administration of digitalis by rectum is more satisfactory than the oral method.

Quinidine—Gordon, Matton, and Levine (*Jour. Clin. Invest.* 1925, 1:497) found in working on cats that the minimal lethal dose of quinidine bisulphate was dependent upon the speed of administration. Whereas 25 mg. per kilogram was usually fatal when given in a single dose, when smaller doses were given at intervals of a few minutes, the total minimal lethal dose increased to about 0.1 gm. per kilogram. The effect on respiration was directly proportional to the size of the dose. With increasing sublethal doses there was a slowing of the rate and a decrease in the depth of the respirations, while with lethal doses the breathing gradually failed and finally ceased. The heart always continued to beat after complete respiratory failure. After respiration had ceased for a period of one or two minutes, they could be revived satisfactorily by artificial respiration combined with the use of caffeine sodio-benzoate.

Sparteine—Soula and Delas (*Bull. acad. de Méd.* 1925, 94:775) review the literature on the use of sparteine, and speak of its tonic action on the heart, since they believe it increases the contractile properties of the sarcoplasm. In this way it increases tonicity and reacts against dilatation. In the Merciers' (*Compt. Rend. Soc. de Biol.* 1925, 93:338) research on dogs, they found that sparteine sulphate increased the amplitude of the heart contractions without reducing the force of the myocardium. Crawford (*Jour. Physiol.* 1925, 59:6 and *Jour. Pharm. and Exper. Therap.* 1925, 26:171) found that in appropriate dosage, sparteine sulphate can cause cessation of auricular fibrillation in the dog, induced by faradic stimulation.

The effect of caffeine sodio-benzoate, theobromin sodio-salicylate, theophyllin, and euphyllin on coronary flow and cardiac action of the rabbit has been studied by Smith, Miller, and Graber (*Jour. Clin. Invest.* 1925, 2:157). Caffeine sodio-benzoate and theobromine sodio-salicylate had little or no effect on the rate, amplitude, or coronary flow in the perfused rabbit heart. With theophyllin and euphyllin there was an increase in coronary output independent of acceleration of rate.

Resnik and Geiling (*Jour. Clin. Invest.* 1925, 1:217) showed by experiments on unanesthetized dogs that pituitary extract effects the heart (a) by stimulation of the vagi through the cardio-inhibitory center, and (b) by a direct action on the myocardium. Similarities between the effects of pituitary extract and of anoxemia were noted.

(2) Clinical—General. *Médicaments et Medications Cardiaques* (Paris: J. B. Ballière et Fils, 1925) consists of a series of lectures by Vaquez arraigned for publication by Théodoresco. Digitalis, strophanthin, and quinidine are considered fully. The book is of interest and contains a good many interesting suggestions, though one does not always agree with the author's views.

An interesting account of the development of therapeutics and a plea for further study of known and empirical drugs was given by White (*Jour. Amer. Med. Assoc.* 1925, 85:81). He points out the three important paths for progress in therapeutic knowledge: (1) discovery of new drugs and other methods of treatment; (2) determination by modern scientific investigation of the value of drugs and methods used empirically in the past; and (3) the reaction of the person to whom the treatment is given.

Digitalis—An authentic volume on the *Action and Uses in Medicine of Digitalis and its Allies* has been published during the past year by Cushny (New York: Longmans, Green and Co., 1925). It is an extremely valuable work, and one worthy of careful study both by pharmacologists and practitioners.

Leech (BOSTON MED. AND SURG. JOUR. 1925, 192:393) gives an interesting study, reporting the use of digitalis in cases with regular rhythm. Of 8 cases of arteriosclerotic heart disease, 6 improved clinically; of 10 cases of myocardial insufficiency, 5 improved; of 6 cases of rheumatic heart disease, without failure, none showed improvement; of 4 cases of rheumatic heart disease, with failure, all were improved clinically; in one case of complete heart block with failure, there was improvement; in 18 cases of relatively high diastolic blood pressure there was no evidence of effect from small doses of digitalis. Small doses of digitalis produced no constant marked change in pulse pressure, systolic pressure, or heart rate and there was no evidence that small doses were of value in mitral stenosis, angina pectoris, hypertension, or myocardial insufficiency.

Pardee (*Jour. Amer. Med. Assoc.* 1925, 85:1359) gives a partial report of a study of hypodermic digitalis preparations. The amount of the drug required to produce a change in the T wave of the electrocardiogram was used as a standard. The minimal effective dose of the preparations tried was found to be much larger than that suggested by the manufacturers. In untreated fibrillation with minimal effective doses by intravenous administration, the T wave was not affected until from 5 to 10 hours. After doses of the tincture, by mouth, equal to 1 minim per pound of weight, the T wave was effected as early as the second hour, maximum at the sixth or seventh hour. Rectal doses larger than the above were effective in 2½ hours. He believes that the promptness of action depends on mass effect, and warns against relying on minimal intravenous doses.

Plummer (*Assoc. Amer. Physic.* May, 1925) strongly advises against the use of digitalis, itself a toxic drug, in cases of hyperthyroidism, stating that it definitely increases mortality. Gold (*Arch. Int. Med.* 1925, 35:482) cites evidence, from his work on cats, which does not justify the fear of using digitalis in the presence of coronary occlusion.

Toxic rhythms produced by digitalis are reported by Luten (*Arch. Int. Med.* 1925, 35:74 and *ibid.* 35:87). Four patients with normal cardiac mechanism developed auricular tachycardia and auriculo-ventricular dissociation after receiving large amounts of digitalis. The ventricular rate was more than 90 in all four cases, above 140 in two of them. The quantitative effect of large toxic doses of digitalis thus closely parallels the quantitative effect of the drug on the heart of the cat in increasing the rhythmicity of the cardiac muscle. Two of the cases also had evidence of impaired conductivity through the bundle branches. Three cases are cited showing alternation in abnormal ventricular complexes, paroxysmal ventricular tachycardia, and auricular fibrillation, produced by large doses of digitalis. This alternation probably resulted from alternating aberration in the bundle branches due to digitalis—not ectopic tachycardia.

Hanzlik (*Jour. Amer. Med. Assoc.* 1925, 84:2024) gives an interesting translation from the works of Purkinje concerning disturbances of vision due to digitalis. Sprague, White, and Kellogg (*Jour. Amer. Med. Assoc.* 1925, 85:716) call attention to this also, reporting 7 cases. Symptoms of toxic amblyopia developed with dimness of vision, flickering and flashing scotomata and marked disturbances of color vision. Jackson and Zerfas (BOSTON MED. AND SURG. JOUR. 1925, 192:890) cite one case of yellow vision.

"Quinidine" — Wenckebach (*Therap. d Gegenw.* 1925, 5:199) fully covers the field of usefulness of quinidine sulphate in fibrillation. He warns against its use in cases with severe heart disease and extensive myocarditis, and finds it practically useless in those cases which digitalis does not help. Where there is severe valvular disease, particulary mitral stenosis, it is to be used with great care because of the danger of emboli. The ideal cases are those whose health and circulation is upset by the irregularity and whose heart muscle is in good shape. The use of quinine with digitalis is referred to, it having been observed that in this way patients seemed to tolerate larger doses of digitalis.

White and Sprague (BOSTON MED. AND SURG. JOUR. 1925, 193:91) describe 15 cases to illustrate the indications and contraindications for the use of quinidine sulphate in disorders of the heart. Four of the cases of permanent auricular fibrillation returning to normal rhythm have maintained normal rhythm for more than 2 years. It is considered a valuable drug, (White, BOSTON MED. AND SURG. JOUR. 1925, 192:185) especially to prevent paroxysmal auricular fibrillation by daily rations. It is also useful in restoring normal rhythm in selected cases of permanent auricular fibrillation without failure, past or present, or extensive valvular or myocardial disease. Levine and Wilmaers (BOSTON MED. AND SURG. JOUR. 1925, 192:388) give their results in treating 37 hospital patients, having auricular fibrillation, and one with auricular flutter. 13 cases returned to normal rhythm, auricular flutter was observed in 5, and there were unexpected fatalities in 3. In only 4 cases did the regular rhythm last more than one month, and in none more than 9 months. The use of quinidine in 20 cases of established auricular fibrillation is reported by Smith and Clarke (*Arch. Int. Med.* 1925, 36:838). 70% of the cases (10) with mitral disease returned to normal rhythm, normal rhythm averaging about 90 days. Of 10 cases having senile, degenerative or arteriosclerotic changes, success was obtained in 40%. 75% of the cases having the coarse type of fibrillation were restored to normal rhythm. The authors point out that the drug is rarely necessary in the group of transient auricular fibrillation, dependent upon such conditions as toxic adenoma of the thyroid, major operations, lobar pneumonia, etc. 4 cases of paroxysmal fibrillation are reported, and the value of the drug in handling these cases of frequent paroxysms is stressed. The maintenance dose given varies up to 0.8 gm. daily.

Restoration of normal rhythm in 75% of 52 cases of auricular fibrillation is reported by Riecker (*Amer. Jour. Med. Sci.* 1925, 170:205). The careful management of the cases with regard to exercise, mental excitement and fever during the quinidine administration, he found to facilitate the favorable action of the drug. Administration through the day and night is advised, and the importance of the use of digitalis after normal rhythm is restored, is referred to. Jamieson (*Canad. Med. Assoc. Jour.* 1925, 15:782) has used quinidine sulphate in 49 cases of auricular fibrillation, and 3 cases of paroxysmal tachycardia. Of the former group, 26 cases had normal rhythm restored, lasting in most cases only several weeks, but in 2 cases for more than 2 years. One case with paroxysmal tachycardia was greatly improved. Levy (*Med. Clin. N. A.* 1925, 9:617) is most enthusiastic about the use of the drug in selected cases of fibrillation, paroxysmal tachycardia, and even premature beats. Two cases are cited at length.

"Epinephrine"—The intracardiac injection of epinephrine in an attempt to resuscitate the heart has received several contributions. Schepens (*Soc. de. Med. of Ghent,* letter *Jour. Amer Med. Assoc.* 1925, 85:2045) has had success in 23 of 43 such attempts. Schapiro (*Zentralbl. f. chir.* 1925, 52:798) reports success in a man of 75 who collapsed following excision, under general anesthesia, of an extensive carbuncle. Bayma (*Med. and Surg Soc.*, Rio de Janeiro, letter, *Jour. Amer. Med. Assoc.* 1925, 84:833) discusses the methods of injection, and the importance of surgeons having necessary material at hand ready for injection during operations. One of 8 of his cases was successful.

Haeberlin (*Münch. Med. Wchnschr.* 1925, 72:727) recommends the repeated injections, subcutaneously, of 0.1-0.2 cc. of a 0.1% solution of epinephrine in cases of circulatory failure. The injections are repeated every hour or two.

Menninger (*Jour. Amer. Med. Assoc.* 1925, 84:1101) has used 2 to 5 mg. doses of epinephrine administered orally in gelatin capsules in 9 patients with hyperthyroidism. 3 gave definite and one a marked reaction. He concludes that epinephrine may produce marked systemic effect on the circulation in some cases of hyperthyroidism, the effect resulting from absorption through the gastro-intestinal canal, and not the mouth or throat.

"Anti-Luetic Therapy" — Schottmüller (*Amer. Jour. Syphilis* 1925, 9:1) is quite optimistic concerning the treatment of syphilis of the aorta. Early diagnosis and intensive therapy is advised. He believes it wise to push the anti-spyhilitic treatment until a definite result is obtained. Goldberg (BOSTON MED. AND SURG. JOUR. 1925, 193:768) outlines a course of treatment, and advises strongly pushing the therapy, using arsphenamine, or allied arsenicals, whenever possible. Grund (BOSTON MED. AND SURG. JOUR. 1925, 192:340) advises the trial of bismuth with potassium iodide in cases of syphilitic cardiovascular disease. Reid (*Jour. Amer. Med. Assoc.* 1925, 84:883) studied 11 cases by electrocardiograms who were receiving small doses of arsphenamine. He found a prolongation of the conduction period and shortening of the refractory period, and suggests that very small doses or to withhold arsphenamine would seem the wisest course.

"Diuretics"—Crawford and McIntosh (*Jour. Clin. Invest.* 1925, 1:333) report good results in 6 of 8 cases given novasurol in whom edema was a prominent symptom of severe heart failure. 1 to 2 cc. doses were used, satisfactory diuresis following. The same authors (*Arch. Int. Med.* 1925, 36:530) administered from 30 to 60 gm. daily of urea to 8 patients with advanced heart failure, finding that it was followed by a marked increase in urine volume. It was of particular value in those cases in which an adequate water excretion was not maintained after the edema fluid had been removed by other measures. The increase in urine output varied with the dose and followed closely the curve of urea excretion.

"Miscellaneous"—Cohn and Levine (*Arch. Int. Med.* 1925, 36:1) report that 3 cases of complete heart block with frequent attacks of syncope and convulsions not helped by the usual procedures, including adrenalin, were promptly relieved by barium chloride by mouth, 30 mg. three times daily. The barium apparently increased the irritability of the ventricle.

Gordon (*Amer. Jour. Med. Sci.* 1925, 170:671) speaks of the fact that venesection has a place in improving the action of the decompensated heart. This was true after other methods, such as drugs, had failed, and the improvement of the condition of the patient was especially notable when roentgenographic examination showed a diminution in the size of the heart immediately after venesection.

Miller (*Amer. Jour. Med. Sci.* 1925, 170:157) found that ephedrine in doses of 50 to 125 mg. given orally or subcutaneously, usually raises the systolic and diastolic blood pressure and decreases the pulse rate for several hours. It stimulates heart action and has a tendency to increase urinary output. It relieved some cases of asthma, subjective sensations in urticaria and serum disease, and gives temporary improvement in circulatory failure incident to myocardial disease. Chen (*Jour. Pharm. and Exper. Therap.* 1925, 26:83) found also that it raises blood pressure in shock induced by histamine peptone, anaphylaxis or surgery. The effect is the result of increased cardiac output and not arterial constriction. No harmful effects were noted.

Stepp and Schliephake (*Münch. Med. Wchnschr.* 1925, 72:1997) controlled attacks of paroxysmal tachycardia, exhibiting also 3:1 and 2:1 block, with intramuscular injections of 0.5 cc. of a 5% solution of choline chloride; a further dilution and slow injection are advisable.

McDowall (*Jour. Pharm. and Exper. Therap.* 1925, 25:289) contends that, even in therapeutic doses, alcohol reduces the venous pressure in man and may relieve in this way. He explains the fact that chronic alcoholics are bad subjects in infectious conditions, especially pneumonia, on the ground that the hearts of such individuals will be frequently subjected to periods of diminished filling, having to do very little work, adapting itself to this small amount of work and being unable to deal with an additional load such as occurs as an emergency in pneumonia.

b. Other Medical Therapy. Muscular work may do harm or good in heart disease according to Hunt (*Guy's Hosp. Report* 1925, 75:20), who advises its use with great discretion. Following long rest in rheumatic cases of from 3 to 6 months, test exercises are allowed that raise the pulse rate 4 to 6 beats, then 8 to 10, etc. Later all cases have exercise graded carefully by the pulse-ratio, allowing it to get up to 2.5 possibly. Hunt points out that massage of the legs helps clear up edema quickly and that breathing exercises may help clear up chronic passive congestion of the lungs, when compensation is returning.

2. Surgical—During the past year there have been many reports on the surgical treatment of various cardiovascular conditions, most notably cervical sympathectomy, embolectomy, and periarterial sympathectomy. The latter operation has been used in a number of varying conditions with as varying results and no attempt is made to review it in this summary.

Sympathectomy—Some considerations on the feasibility of this procedure have been given in an earlier section of this summary (*Pathology of Angina Pectoris*). Jonnesco and Ionesco (*Presse Méd.* 1925, 33:1697) examined patients from a few weeks to a few years after partial or total resection of the cervical sympathetic ganglia in treatment of angina or other conditions. The pulse and blood pressure were normal.

Roentgenoscopy showed that the operation had not affected the size or shape of the heart, and there were no changes in the electrocardiogram or in auriculo-ventricular transmission of the impulse wave. Injection of epinephrine accelerated the pulse and increased the blood pressure even in those with old bilateral sympathectomy. Jonnesco (*Bull. acad. de Méd.* 1925, 94:919) cites the 74 cases in which he has performed sympathectomy. His cervico-thoracic resection was applied in 32 cases; in 24, the partial cervical sympathectomy (including the stellate ganglion); and resection of the depressor nerve in 18. The mortality in all types is 20%. He concludes that resection of the cervical and thoracic sympathetic, including the stellate ganglion, is the only effectual treatment of angina pectoris. Opposed to this Daniélopolu and Marcu (*Bull. acad. de Méd.* 1925, 94:884) from experiments on dogs and post-operative observations of clinical cases, conclude that removal of the stellate ganglion induces grave changes in the electrocardiogram, and believe the operation is dangerous.

Levine and Newton (*Amer. Heart Jour.* 1925, 1:41) point to the careful selection of patients (no congestive failure, little myocardial or valvular disease, and reasonably normal electrocardiograms) stating that some patients suffering from angina pectoris have been strikingly helped by cervical sympathectomy. 8 operative cases are cited. 7 were alive 3 months to 2 years following operation. 3 cases have remained free from angina, in 3 the patients are much better though still having typical angina, and one case was unchanged. One case with luetic aortitis and aortic regurgitation died on the day of the operation. Reid and Andrus (*Ann. Surg.* 1925, 81:591) have collected from the literature 62 cases operated upon for angina pectoris; in 50 cases the sympathetic nervous system was operated upon; in 10 the depressor nerve of the parasympathetic system. In possibly 2 instances, both sympathetic and depressor nerves were removed. Some 13 patients seem to have been unquestionably relieved of pain by operation. The best results have been obtained by doing a cervico-thoracic sympathectomy in those cases of typical angina pectoris, unassociated with recognizable serious cardiac lesions. 4 of the cases above were performed by the authors. Two cases are reported by Ransohoff (*Jour. Amer. Med. Assoc.* 1925, 84:61) in which he performed sympathectomy by Jonnesco's method. One was absolutely relieved of attacks 6 months after operation, and the other greatly improved but having at times a sense of fulness in the precordial region 4 months after operation. Kerr (*Ann. Clin. Med.* 1925, 4:30) has resected the left superior cervical ganglion, together with the superior cardiac nerve, in 4 cases of angina with complete relief in 2, partial relief in one and failure in one. In 8 cases (*Ann. Surg.* 1925, 72:354) the left superior sympathetic ganglion was removed. In two cases the operation was repeated on the right side and in one, at a third seance, the middle cervical and stellate ganglia were also avulsed. In 5 cases, complete relief was obtained, in 2 cases partial relief, and in one case no relief. An enophthalmos and contraction of the pupil on the operated side resulted. Lilienthal (*Arch. Surg.* 1925, 10:531) presents 3 cases treated by cervical sympathectomy, all relieved a great deal 3 months after operation. Gernez (*Arch. Franco-Belges de chir.* 1925, 27:905) removed the entire cervical sympathetic in a woman of 47 with definite relief which has persisted for 10 months.

Mandl (*Arch f. Klin. Chir.* 1925, 136:495) performs a paravertebral injection of anesthetics in treating angina pectoris, stating that it always arrests the acute attack, and frequently has a prolonged beneficial effect.

"Embolectomy"—Stein (*Amer. Jour. Obst. and Gynec.* 1925, 9:595) from a study of the literature believes that where there is embolic obstruction of a main artery, embolectomy should be performed as promptly as possible, as it offers the only possibility of saving the affected limb or perhaps averting a fatal outcome.

There are a number of reports of successful embolectomy. Jefferson (*Brit. Med. Jour.* 1925, 2:985) successfully removed a post-operative embolus from the axillary artery. Henney, Snyder, and Hoyer (*Jour. Amer. Med. Assoc.* 1925, 84:1566) report a case of subclavian embolectomy, well 6 months later. Aleman (*Acta. Chir. Scandinav.* 1925, 59:68), Lian and Moure (*Presse Méd.* 1925, 33:1265), and Rodriguez and Conntant (*Bol. Soc. Cir. Chile,* 1925, 3:115) each report a successful case, the embolus in all three cases being concomitant with cardiac failure. In Torrell's (*Acta. Chir. Scandinav.* 1925, 59:171) 3 cases, one was successful, gangrene probably being averted, amputation was necessary later in the second, and the third was unsuccessful. Söderlund (*Acta. Chir. Scandinav.* 1925, 59:225) adds two new cases to the 62 he collected from the literature. Good results were obtained in 33% of the cases. Dickinson (*Arch. Surg.* 1925, 10:991) removed a brachial artery embolus, but gangrene ensued, and the patient died on the third day after operation.

"Suture"—Maguire (*Surg. Gynec. and Obst.* 1925, 60:623) successfully sutured a wound in the right auricle, the result of a stab with a knife. Cecchini (*Policlinico* 1925, 32:699) reports two cases 17 years after the heart was sutured, as being in excellent condition.

Vance (*Amer. Jour. Med. Sci.* 1925, 169:872) presents 3 interesting cases suggesting conditions under which healing can take place in the heart wall. All three cases were bullet wounds of such a nature that the primary complications were avoided, conditions being favorable for the process of repair, which was found at necropsy in all three of them.

"Pericardial Surgery"—Loe (*Northwest Med.* 1925, 24:285) and Spangenberg (*Semana Méd.* 1925, 1:37) each report a successful cardiolysis for adhesive pericarditis. Guleke and Lommel (*Klin. Wchnschr.* 1925, 4:737) successfully resected the pericardium in a case of pericardial concretion.

"Miscellaneous"—Escudero and Merlo (*Rev. Asoc. Med. Argent.* 1925, 1:361) report no benefit from splenectomy in a case of subacute bacterial endocarditis.

Colt, Marshall, and Wakeley (*Brit. Jour. Surg.* 1925, 8:109) believe that wiring of aortic aneurysms is worthy of trial, regardless of the fact that their 3 patients all died within 8½ months after operation.

Horsley (*Jour. Amer. Med. Assoc.* 1925, 85:1208) has studied the healing of arteries in animals, after different methods of ligation. He concludes that in order to insure a permanent occlusion of a large arterial channel, the best method of ligation is to apply 2 or more (best 3) ligatures and to sever the artery between them, allowing the ends to retract. Where 3 ligatures are applied in large vessels, the proximal ligature takes up the impulse of the heart beat and permits the tissue within the grasp of the distal ligature to heal at rest.

X. PREVENTION AND SOCIAL ASPECTS OF HEART DISEASE

It is well to pause here for a moment to mention the passing of a person of such note in the medical world, particularly in the cardiovascular field, as Sir James Mackenzie. His many contributions are too familiar to warrant review. A fitting tribute is paid him by Sir Thomas Lewis (*Heart* 1925, 12:1), reviewing his long, useful life and accomplishments.

This year marks the publication for the first time in the United States of a Journal devoted wholly to Cardiovascular studies, the *American Heart Journal* (October, 1925, Vol. I, No. 1). It should fill a long felt need.

There continues a rather slowly developing general movement for the prevention of heart disease, but no great impetus or work has been reported during the past year. The problem is an extremely difficult one. Wyckoff (*N. Y. State Jour. Med.* 1925, 25:995) gives the details of organization for a cardiac clinic with social service functioning as a great assistance. Swift (*N. Y. State Jour. Med.* 1925, 25:991) points to the formation of special cardiac clinics and periodic examination of apparently well persons as means of early diagnosis. Wolferth (*Atlantic Med. Jour.* 1925, 28:640) stresses the latter point of education of the laity to the desirability of periodic examinations, and the proper care of infections and obesity as etiological agents.

The work of the Philadelphia Association for the Prevention and Relief of Heart Disease is explained by Stroud (*Arch. Pediat.* 1925, 42:190). Long convalescence after infections in children, which usually or occasionally damage the hearts, is advocated. In cases with questionable or definitely damaged heart absolute bed rest, increased nutrition, and removal of foci of nfection is carried out.

Swift (*Amer. Jour. Med. Sci.* 1925, 170:631) deplores the fact that rheumatic fever cases do not get rest over a sufficiently long period of time. This needs be true since if general hospitals kept such patients for long periods there would be only rheumatic fever patients in the wards during the winter and spring months. Institutional and sanatorium treatment of tuberculosis has pointed a way. A few such heart hospitals where intensive study could be made would help greatly. Faber and Barnet (*Arch. Pediat.* 1925, 42:41) stress the value of the convalescent home in the management of chorea minor.

Dublin, Lyman and Kopf (*Amer. Jour. Med. Sci.* 1925, 170:576) present interesting data of 16,662 examinations on white males by the Life Extension Institute. 3.4% more enlarged hearts and 10.9% more people with a pulse rate over 90, were found in overweight people. Blood pressure differences between tobacco users and abstainers were very slight. They believe that control of excessive body weight will probably lead to a sharp reduction in the actual number of individuals with embarrassed hearts.

Gilbert (*Jour. Industrial Hygiene* 1925, 192:105) discusses the attitude of the employer towards individuals with heart disease. He broadly classifies employees with cardiac conditions in 3 groups. The article includes a consideration of, but does not clear up, what should be done with the effort syndrome cases, which comprises a large part of labor and is a difficult problem.

McLean (*Amer. Heart Jour.* 1925, 1:107) makes a plea for the lack of coördination of laws governing the care of the sick and suggests some legislative measures which may help. Data should be compiled, he believes, to help officials know the status of all institutions—number of patients, beds, etc., for both state and local workers.

(Concluded)

Case Records
# of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12191

GLANDS IN THE NECK AND AXILLAE. CAUSE?

MEDICAL DEPARTMENT

An American thirty-one years old employed in a paper mill entered March 3 complaining of swelling of the glands, especially those of the neck.

The family history is not significant. The patient had measles, mumps and whooping cough in early childhood and chorea for a year sometime before he was twelve. He had always been nervous and easily excitable. (The history taker believed the patient was mistaken in thinking this, and that his "nervousness" at present was merely due to financial worry.) Otherwise he had always been strong and healthy. He had very rare mild frontal headaches. Through each winter he had a little nasal catarrh.

Six weeks before admission he noticed a small lump about the diameter of his thumbnail back of his right ear and one in the left axilla a little larger and slightly sore. The glands were hard, discrete, and ached slightly, but were not tender to pressure. The one in the axilla grew to the size of a pigeon's egg in a week and remained this size until a week before admission, when it began to decrease in size. Two weeks after the appearance of these he noticed many lumps on the back and sides of his neck, especially on the right, one under the right arm, one in the left epitrochlear region and many in the groins. These reached their present size in a day to a week, and like the earlier ones ached slightly but were not tender to pressure. At the time of their appearance he found that he tired easily, had mild dyspnea on exertion, and had cough, worse at night, with white sticky sputum when he forced it up. Sitting up relieved the cough. He gave up work, though he could have worked if forced to.

During his first week at home he had poor appetite, a little epigastric discomfort after food, and occasional nausea before eating, relieved by food. A physician found his temperature normal and his blood pressure low, and gave him salve containing iodine which seemed to relieve the aching of the glands. The patient's wife took his temperature daily and never found it elevated. During the four weeks preceding admission his bowels were slightly irregular. The stools were smaller and harder than usual. He had taken a better diet and had had an excellent appetite. During the past week he had regained his strength and lost his dyspnea. Twice a week since the onset he had had profuse night sweats. In the past two days he had had practically no cough. His best weight was 115 pounds, six years ago. Before the present illness he weighed 110 pounds. He now weighed 114½.

Examination showed a fairly well developed and nourished young man, not acutely ill. There was pyorrhea. The tonsils were very large. There were many discrete glands all over the body including the posterior and anterior triangles of the neck, the supraclavicular fossae, the epitrochlear and inguinal regions, Scarpa's triangle, and especially marked in the axillae. The heart was negative. The blood pressure was 115/55-110/40. There was dullness over the right lower lobe behind, and râles after cough over the right lower lobe. The abdomen was very tense and difficult to palpate. The liver dullness was somewhat increased. In the Out-Patient Department the day before admission the spleen was felt 3 cm. below the costal margin. At admission to the wards it was again felt. At the time of the complete physical examination it could not be felt. The prostate was markedly enlarged and tender, especially the left lobe.

The urine was deep amber at two of four examinations, dark colored at one, specific gravity 1.030 to 1.018, amount 35 to 80 ounces; sediment, occasional leucocytes at three examinations. Blood examination showed 12,400 to 33,400 leucocytes, 81 to 90 per cent. polynuclears, hemoglobin 75 per cent., 4,112,000 to 4,280,000 reds, slight achromia, a rare stippled cell, occasional polychromatophilia, platelets slightly increased, reticulated cells 1.2 per cent. Bleeding time two minutes. Wassermann negative. Sputum mucopurulent. Smith stain showed very few organisms, a few encapsulated cocci, no influenza bacilli, eosinophils or phagocytes.

X-ray showed marked increase in the hilus shadows on both sides. Extending outward from the lung root was a coarse mottled dullness, more extensive on the right than on the left. The outline of the diaphragm was indistinct on the right. The costophrenic sinuses were hazy. The respiratory movements were limited. The intercostal spaces were also somewhat narrow on the right. The heart shadow was not remarkable.

The temperature was 97° to 100.7° until March 9, afterwards 99.9° to 104.4° by rectum; daily afternoon rise throughout. The pulse was 70 to 126, the respiration 20 to 42.

March 6 three glands were removed from the right sternomastoid region under local anesthesia. March 10 the patient developed acute pain in the right side, and the following day showed dullness and a friction rub over the right lower chest. At midnight March 12 the whole right chest was flat, with increased voice and breath sounds and bronchial breathing. The heart was very rapid and loud. The patient was too ill for examination in regard to displacement of the heart. The sclerae were definitely icteric. The morning of March 13 he died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

If a man presents himself with swelling of the lymph glands, especially those of the neck, what should we have in mind as to the possibilities? This is a man of thirty-one, so the chances are against their being tuberculous. If he were thirteen or eight years old we should think the chances much more in favor of tuberculosis. If not tuberculosis, what is the next chance? The next chance is the thing we call Hodgkin's disease or malignant lymphoma. Next after that I should say would be syphilis, although in syphilis the glands in the neck are not often big enough to call to the patient's attention. However, the glands due to syphilis and syphilis alone *may* be as big as with any disease. He would not be likely to go into a hospital for the slight adenitis due to tonsils, teeth, etc. It is not at all likely that a patient who comes into the wards seriously ill has any of these. After all these comes leukemia. These are I think the only probabilities in this case. As in any differential diagnosis, we can go on to add very numerous possibilities, but the part of wisdom I think is not to put down things at the outset and not to bring up in our minds things that are so rare that they practically never occur. I think the four or five things I have mentioned are all that we ought to think of without more information than we have as yet.

His past history gives us no clue.

It is worth while to say a word or two about what we call "normal glands." Nearly everybody in adult life has palpable glands in his neck, in his axillae or his groins. Are we to put those down in our records as evidence of disease? I think not. They are so common, so inactive, so unimportant, that I think nothing that is not bigger than a pea should be put down. This is perfectly arbitrary of course. But I should say that anybody who goes over his experience can remember so many cases of normal people with pea-sized glands that it is not worth while to record them. Of course every pathological gland obviously enlarged, as big as the fist, must at some time have been as big as a pea. But when we find them of that size and find nothing else it still seems to me they should be disregarded.

I will venture to say that he would not have mentioned any of the accompanying thoracic symptoms if the history-taker had not gone after them. The history-taker, knowing that he had glands in his neck and axilla, thought that he might have them also inside the thorax. If he had glands inside the thorax, the historian asked himself, what symptoms would he have? He would have dyspnea and cough. So he asked for dyspnea and cough, since those symptoms are often produced by glands around the trachea and bronchi, where we should expect to find them in the disease which I imagine we are all thinking of, Hodgkin's disease.

Night sweats are common in all of the diseases that we are considering here.

Summing up the data previous to the physical examination, it seems to me we have enlarged glands and nothing else. He does not present symptoms other than those due to the glands themselves. He does not show fever, we have no reason to believe he is anemic, he has not lost weight. It all comes down to the presence of glands in his neck and axilla and very possibly in the mediastinum.

NOTES ON THE PHYSICAL EXAMINATION

"All over the body" is a poor phrase. The historian does not mean in the middle of the back or in the thigh. He means in the situations in which we are most likely to find glands.

We should like to know how large these glands were.

Dr. F. T. Hunter: I think the ones in the axillae were about the size of a big plum or small peach.

Dr. Cabot: Does anybody notice anything queer about the blood pressure?

A Physician: The low diastolic pressure.

Dr. Cabot: Yes, the diastolic is pathologically low. What might that blood pressure be due to? What are the causes of a big pulse pressure, that is, a big discrepancy between the systolic and diastolic pressures? First, of course, aortic regurgitation, second arteriosclerosis, third hyperthyroidism. These are the three common causes of big pulse pressure, with, fourth, no explanation whatever, no cause found, and that is what I imagine will be our conclusion in this case.

When we find these chest signs and nothing else we think of a big liver. We do not think first of anything in the lung. Ordinarily an enlarged liver pushes up, the diaphragm is high, and we find dullness.

The abdominal examination showed what we should expect to find.

The urine was normal.

His blood showed a polynuclear leucocytosis and a slight anemia. We have to find cause for those somewhere else in the body. The reticulated cells are about twice what they should be. All of the details mean moderate secondary anemia, shown in all of these different ways.

I like to commit myself on the record of the X-rays and then see if we can get any further light on them. I should say that this record means glands probably at the hilus of each lung, possibly fluid at the right base, and that is all.

Dr. John D. Camp: I do not believe there is anything more. I should not like to say without having the films to look at.

Dr. Cabot: You would not be sure of any fluid here, would you?

Dr. Camp: No.

Dr. Cabot: What are the other causes that make a diaphragm hazy, supposing the patient does not breathe?

Dr. Camp: In the first place the patient is very obese. That may make it hazy. In women there may be large breast shadows which make that area dull and sometimes produce the appearance of fluid.

Dr. Cabot: The radiologist would be able to distinguish those two, wouldn't he? Is there anything inside the chest?

Dr. Camp: A very high diaphragm. I do not think one would confuse consolidation.

Dr. Cabot: How about adhesions?

Dr. Camp: Adhesions would produce irregularity; they should not produce haziness. We may have a very thick pleura, which would make it hazy.

Dr. Cabot: Of the things just mentioned, high diaphragm is the one I have been thinking of, by reason of the disease that is in my mind, as accounting for this.

The glands excised showed, I believe, Hodgkin's disease. We shall see later whether I am right.

These are contradictory lung signs. I do not believe the chest was flat. It may have been. But I guess it was dull. If it was flat he ought not to have had as striking breathing, especially not those increased voice sounds. That is rare with a flat chest.

I do not see why we should not be able to tell about the displacement of the heart with one patient as well as another. We do not have to move him.

DIFFERENTIAL DIAGNOSIS

To go back over the differential diagnosis with which I started, there is no reason to suppose he had tuberculosis. The course has been too acute for such a thing. Tuberculous glands probably have ulcerated and would be there for a much longer time. We have no evidence of tuberculosis of the lungs. Tuberculosis, it seems to me, can be excluded.

Syphilis would not give us this picture and would not kill the patient.

Leukemia would give us a different blood. would be absolutely ruled out by the blood.

I do not see anything at all reasonable to suppose except Hodgkin's disease. Hodgkin's disease was not the immediate cause of his death. He had something else, I think pneumonia possibly, with fluid too, possibly empyema. We have not details enough to decide. I think that that was the cause of his leucocytosis. Hodgkin's disease gives no leucocytosis, does not affect the cells. It goes along with slight anemia.

I think Dr. Richardson will find large lymph glands in the mediastinum, around the bifurcation of the trachea, probably similar ones along the root of the mesentery. He will find an enlarged spleen and an enlarged liver, both infiltrated with the same sort of tissue. The only doubt about that is the effects of the infection. When an acute infection comes on top of Hodgkin's or leukemia the spleen and glands often go down in size very rapidly. They may have diminished before they reached Dr. Richardson.

If we are wrong here I do not believe we can be accused of reasoning wrongly on the facts given us. On these facts we can reach no other diagnosis. Of course differential diagnosis is always exposed to the risk of our saying it must be A, B, C, or D, when in fact it is E, which we never thought of. But on the facts given us I do not think we have a right to think of anything else than we have already said. If it is Hodgkin's, what other symptoms not spoken of might be present? He might have had a long irregular fever, the fever first described by Osler. He might have had pigmentation of the skin. Nothing is said about that. He might have had cutaneous nodules of the same nature. He might have had cutaneous hemorrhages, because if the disease gets into the marrow it diminishes the platelets and so brings about hemorrhages. Intercurrent tuberculosis complicating the disease is quite common, so much so that some authorities used to think that the whole thing was a form of tuberculosis. Nobody thinks so now.

Supposing the diagnosis is correct, what is the cause? It is a neoplasm. We do not know anything about the cause of neoplasms. What is the cure? X-ray is the best thing to hold it down. With the X-ray we can banish the lesions for a time. Whether the patients live longer I do not know.

Dr. Camp: According to recent statistics the length of life is not prolonged much. The usefulness of the patient is prolonged and he lives in more comfort.

Dr. Cabot: That is certainly the case with leukemia. The statistics which Dr. George Minot has published from the Huntington Hospital, which are the largest statistics, I think, in the world, go to show that although we can banish the leukemic blood and banish the infiltrations the patient is not going to live any longer. When I get one of these diseases I am not going to be treated. I don't think it does any good.

X-RAY INTERPRETATION

In view of the character of the glands found over the body it is probable that the process in the right lower chest is that of the infiltrative type of Hodgkin's disease.

BIOPSY

Pathological examination showed a structure of small atypical cells of the lymphocyte series. There was no fibrosis. Malignant lymphoma.

CLINICAL DIAGNOSIS (FROM HOSITAL RECORD)

Malignant lymphoma.
Lobar pneumonia.
Biopsy of gland of neck.

DR. RICHARD C. CABOT'S DIAGNOSIS

Hodgkin's disease.
Pneumonia.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

   Malignant lymphoma involving the spleen and the retroperitoneal, mesenteric, bronchial, cervical, axillary and regional lymph glands.

2. *Secondary or terminal lesions*

   Septicemia, streptococcus hemolyticus.
   Slight icterus.
   Purulent bronchitis.
   Focal pneumonia and abscess formation, right lung.
   Serofibrinous pleuritis, right.

3. *Historical landmarks*

   Slight chronic pleuritis.

Dr. Richardson: The definite anatomical conditions in this case were as follows. The skin was brown in places, sulphur yellow tinged in others,—icterus. There was the short sutured wound in the neck mentioned. The abdomen was slightly distended, the wall tense. There were enlarged gland-like masses in the cervical, axillary, and inguinal regions.

The greater curvature of the stomach was 4.5 cm. below the level of the umbilicus. That is pretty well down. The gastro-intestinal tract out of the picture.

The mesenteric and retroperitoneal glands were all enlarged, in groups and masses, and the retroperitoneal were strung along the aorta in the usual situations. The section surfaces of those enlarged masses showed pale, homogeneous, rather elastic, in some places soft lymphoid tissue, the typical picture of malignant lymphoma.

The margin of the liver was fourteen centimeters below the costal border. So we found the margin of the liver well down and the greater curvature of the stomach well down. That would indicate that the diaphragm on the right is going to be low; and it was at the seventh rib. On the left it was at the sixth interspace,—a little low on the left, but well down on the right.

The right pleural cavity contained about 2000 c.c. of thin cloudy fluid and fibrin,—extensive serofibrinous pleuritis on the right. On the left side only 100 c.c. and that fluid was fairly clear; it could not be definitely stated that it was pleuritis. The trachea and bronchi contained considerable mucopurulent fluid, purulent bronchitis. The bronchial glands were enlarged singly and in groups, with some pressure on the bronchi. They measured up to five centimeters across. Their tissue was similar in appearance to the tissue of the enlarged glands elsewhere. The apex of the right lung was negative. In the lower half of the upper lobe there was well marked boggy pneumonia, purulent in places. Over this region there was fibrinous exudate on the pleura. The middle and lower lobes in the midst of the fluid were atelectatic, but showed no evidence of consolidation. The left lung showed no areas of consolidation. There was moderate edema.

The liver weighed 1860 grams. That is a little enlarged for him. The surfaces were smooth and the tissue both macroscopically and microscopically was negative. The spleen was enlarged. It weighed 400 grams, with a rather plump tissue, showing in the region of the follicles scattered through the section surfaces small pale areas up to three millimeters across. The tissue was infiltrated with lymphocytic cells.

Culture from the heart blood yielded a good growth of the streptococcus hemolyticus, the source of the icterus.

Dr. Cabot: Do you suppose that was the cause of the pneumonia, or do you think there was another organism?

Dr. Richardson: No; I think that the microorganism of the pneumonia was the streptococcus.

Dr. Cabot: If you had been shown these organs including the glands, we will say outside the body, could you have told either macroscopically or microscopically that it was not leukemia? That is, can you tell the difference between this condition and leukemia if you do not see the blood?

Dr. Richardson: It seems to me if they came down and said, "Do you get the leukemic picture?" I should say "Yes."

Dr. Cabot: That is what I wanted to bring out. I think we have to be on the lookout not to be fooled by this disease. I think Dr. Richardson's term, malignant lymphoma, is a good one. I have got used to the other, but malignant lymphoma I think is a better term. People also speak of it as lymphoma and also as lymphoblastoma, but those are all the same thing so far as I know.

Dr. **Richardson**: Lymphoblastoma is Mallory's term for the condition, the lymphoblast being the type cell. When the blood is invaded the condition is called leukemia.

Dr. **Cabot**: Dr. Hunter, have we had other cases with similar complication?

Dr. **Hunter**: No. I have seen two in another hospital, with collapse of the lung.

Dr. **Cabot**: Was it hydrothorax or purulent pleurisy?

Dr. **Hunter**: They did not come to necropsy. They might have been the same. They gave the same picture.

Dr. **Cabot**: I do not know whether this man was radiated.

Dr. **Hunter**: I think he got only one treatment.

Dr. **Camp**: Some of these very sick cases seem to do badly, and others do better with it. There is apparently no way to make sure before we start the treatment. This apparently was one of those that were not helped by it.

CASE 12192

HEMATURIA. CAUSE?

Surgical Department

A Portugese-American seventy-nine years old entered December 28 complaining of burning micturition. His past history was negative except for slight dyspnea and palpitation and longstanding constipation and hemorrhoids.

For three or four months he had had burning at the head of the penis during and following micturition; also urgency. From the onset he had with micturition an intense desire to defecate and often did defecate; vice versa, with defecation he often had great urge to urinate at the same time, causing him much pain and discomfort. The stream was sometimes rather slow in starting and sometimes dribbled a good deal. Two months before admission the urine was red on several successive occasions. For the past week he had had a rather severe head cold.

Examination showed a rather yellow, dried up, poorly nourished old man. There were a few crackles in the right upper chest and at both bases. The apex impulse of the heart was not found. There was no enlargement to percussion. The sounds were distant and of poor quality. The artery walls were markedly thickened and tortuous. The blood pressure was 155/80. The liver projected about two inches below the right costal margin. A smooth sharp edge was felt. Rectal examination showed moderately large hemorrhoids encircling the rectum and moderate prolapse of the rectal mucosa beyond the sphincter. There was absolutely no tone to the sphincter, so that it was impossible that the patient could have much control of the bowels. The prostate was uniformly enlarged and rather abnormally soft in consistence. The median sulcus was not felt. The vesicles were not felt.

Before operation the urine was slightly cloudy and alkaline at one of two examinations, a very slight trace to a trace of albumin at both, specific gravity 1.010 to 1.007, amount 25 to 73 ounces; the sediment showed red blood cells at both examinations, leucocytes at one. Blood examination showed 40 to 65 per cent. hemoglobin, reds 2,170,000 to 3,150,000. Wassermann negative. Renal function December 31: appearance time not obtained because of rather marked hematuria; first hour 5 per cent., second hour zero. Non-protein nitrogen 70 to 80 mgm. Uric acid 6.1 mgm.

X-ray December 30: Both sacroiliac joints, especially the right, were somewhat indistinct. Proliferative changes were visible about the lower margins, suggestive of proliferative arthritis. No changes characteristic of metastasis were visible in the pelvis at this time. Slight lipping of the margins of the lower lumbar vertebrae and of each acetabulum. January 4 both lung fields were bright. No abnormal shadows were present. The diaphragm was rather high and flat on the left. The costophrenic sinus was shallow, suggesting old pleurisy at the left base. No evidence of metastatic malignant disease in the chest.

Before operation the temperature was 96.5° to 99.2°, the pulse 74 to 95, the respiration not remarkable.

The day of admission catheterization with a number 18 soft catheter caused much pain and also much spontaneous expulsion of feces. There was a residual or two ounces of dirty brown slightly blood tinged thick pussy urine. The patient had a considerable cold in the head. During the next two days he had the trouble with simultaneous micturition and defecation mentioned in the history.

December 31 cystoscopy was done. After it he passed much bloody urine. January 6 a second cystoscopy was done. He continued to pass almost pure blood from the urinary tract. January 7 direct transfusion of 500 c.c. of blood was done.

January 8 operation was done. Following it there was considerable hemorrhage from the bladder. The patient was delirious and so noisy that he had to be taken from the open ward. The respirations dropped to six or eight a minute as a result of medication in small amounts. January 11 the patient died.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

Red urine suggests blood.

It is unusual to have a man of seventy-nine start adenomatous prostatic obstruction as late in life as this. Ordinarily symptoms from that will last a longer time, and generally will begin between sixty and seventy rather than at nearly eighty.

There was absolutely no tone to the sphincters. That always makes us think of a nerve lesion. Of course lack of tone is present occasionally in an old person, especially with some abnormality about the anal opening, without nerve trouble.

With the median sulcus gone and the prostate large and soft there is definite enlargement. But there is one thing to remember, especially where they put that phrase "abnormally soft". If we do get that impression in a man of this age, with this short period of symptoms, a central prostatic carcinoma must be considered. Occasionally a malignant degeneration of adenoma means that. It is a horrid feeling to be enucleating what one supposed was a soft prostate and tumble through into nothing and fear it is in the rectum. Of course this is not proof, but it is to be considered.

Here is evidence of kidneys that are badly damaged, and that may be from the arteriosclerotic nephritis of an old man, or if it is due to the prostate, a long-continued process in spite of the absence of symptoms.

They have in mind the same thing that I have spoken of, and that is the possibility of malignancy, either starting with degeneracy of the prostate or coming from the wall of the bladder. Furthermore there is the possibility that the red urine that he had two months ago was blood. We should have expected more blood, however, if it was a bladder cancer.

Cystoscopy ought to tell us something. They may have stirred up so much bleeding by running into a tumor that they did not see a thing. In that case about the only thing we have left is either to try again or open the bladder.

Before we see what the cystoscopy report says, is there anything else we could accept? Of course he may have gone along and had diverticulum of the bladder. It is a thick pussy urine. A diverticulum in a certain place will not give symptoms until infection takes place or until at the base there is a malignant change. That is possible.

Stone I think is highly improbable. He has not had the intense pain that we should expect to go with that. There is no reason for him to start a stone at his age. Stricture is out of the question, because he has been catheterized.

It seems to me the best thing to consider is carcinoma in or near the prostate. That this can be due to kidneys alone I think is highly improbable in spite of the fact that they are badly damaged.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Carcinoma in or near the prostate.

PRE-OPERATIVE DIAGNOSIS DECEMBER 31

Carcinoma of bladder?

FIRST CYSTOSCOPY

No anesthesia except morphia gr. ¼ s.c. On account of profuse bleeding a very poor inspection was obtained. The small portion of the left upper lobe of the prostate seemed to be normal. The rest of the orifice was obscured by blood clot. The bladder wall could not be seen.

Further Discussion

In other words they did not get anything. They stirred up blood and did not see a thing. I do not believe they found anything more at the second cystoscopy.

PRE-OPERATIVE DIAGNOSIS JANUARY 6

Carcinoma of the bladder?

SECOND CYSTOSCOPY

Gas-oxygen. Profuse bleeding which could not be controlled by washing or constant irrigation. The operator could see the prostatic ring poorly, but could make out no pathology. The bladder wall could not be seen. It seemed likely that there was neoplasm of the bladder itself.

Further Discussion

I should have assumed that they would operate and transfuse at the same time, in order to get in and stop the source of bleeding.

We have to realize that this is an operation of necessity. A man of seventy-nine with his kidneys all shot as these are, with the non-protein nitrogen up, the renal function almost gone, is of course the worst possible risk.

PRE-OPERATIVE DIAGNOSIS JANUARY 8

Carcinoma of the bladder.

OPERATION

Ethylene. A midline incision was made extending from the superior margin of the symphysis three inches toward the umbilicus. On opening the bladder a large cauliflower-like mass was found involving the whole base and left side of the bladder. Several pieces broke off. A retained catheter was sutured into the bladder and the wound closed.

PATHOLOGICAL REPORT

Two soft mushy fragments showing on microscopic examination large alveolar clusters of undifferentiated epithelial cells.

Carcinoma.

Further Discussion

He simply had more hemorrhage. There is no evidence that they tried to cauterize it or put in radium. I think the interest in the case would be to see whether there is involvement of the prostate, so that the abnormally soft feel was actually carcinoma, and whether there is metastasis.

It is interesting that he has had so little bleeding, because carcinoma of the bladder generally has more bleeding.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the bladder.
Arteriosclerosis.
Suprapubic cystostomy.
Direct transfusion.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Carcinoma of the bladder.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Carcinoma of the bladder with obstruction of the left ureteral opening.

2. *Secondary or terminal lesions*

Extensive hydronephrosis of the left kidney.
Slight hydronephrosis of the right kidney.
Edema of the lungs.
Arteriosclerosis.
Slight chronic verrucose endocarditis of the mitral and aortic valves.

3. *Historical landmarks*

Slight chronic pleuritis.
Operation wound.

Dr. Richardson: The carcinoma rested at the base of the bladder, and at one side extended down nearly to the prostate but not into it. The prostate itself was negative.

CASE 12193

UNEXPECTED OPERATIVE FINDINGS IN AN ACUTE ABDOMINAL EMERGENCY

Surgical Department

A native born married woman forty years old entered for the first time May 27, eight months before her second admission.

Twenty years before admission, with her first pregnancy, she had twenty-two convulsions. At the end of seven months she was delivered with forceps. The child died prematurely. Following her delivery she was troubled with "procidentia". She was operated upon at a hospital and improved greatly, but had continued to have a discharge to the present time. In the two years following this operation she had two pregnancies, both terminating in miscarriages at about four months. The following year another pregnancy went to full term. Forceps were used. The child was stillborn. She believed the uterus was torn. No stitches were taken. Since that time the discharge had been profuse and had troubled her a good deal. During the past three months her menses had been irregular, about twice monthly, and on lying down she felt a dizzy sensation.

She had had no other illnesses. Her mother died of shock. Her family history was otherwise negative.

Physical examination was essentially negative except for the pelvic examination, which showed slight rectocele and cystocele, prolapse with hypertrophy of the anterior lip of the cervix, and an extensive old tear of the cervix out into both broad ligaments.

At operation the uterus was curetted. An attempt to free the adhesions was unsuccessful on account of hemorrhage, which was controlled with a pack. A pathological report on the material obtained by curettage was, "A few fine soft filamentous fragments showing on microscopic examination hyperplastic endometrium filled with hemorrhage, containing small areas of necrosis."

June 3 she was discharged.

She was in good health for the next eight months except for some constipation, which she had had for a long time.

February 1, eight months after her discharge, she had colicky pain starting in the midepigastrium and radiating over the entire front of the abdomen. She vomited twice and had little appetite. The pain became somewhat duller. Her abdomen became distended. She belched much gas and passed a little by rectum. The day of the onset she took some charcoal pills, as her bowels had not moved the day before. During the next six days her bowels did not move. February 2 she vomited twice, February 5 three times. Two enemas February 5 brought back some charcoal colored fluid. February 6 she vomited four times. The vomitus was watery bile-colored material. She ate practically nothing all the week.

February 6 she was readmitted to the hospital through the Emergency Ward, where her temperature was 101° by rectum, the leucocyte count 15,000 and the urine negative.

Examination showed an obese woman with colicky abdominal pain at intervals. The teeth were poor. There was marked pyorrhea. The abdomen was distended. Peristalsis was easily heard but not seen. The abdomen was tender throughout, slightly more so in the lower quadrants, and tympanitic, with voluntary spasm. Pelvic examination showed a prominent anterior lip and fixed cervix. No definite tenderness or masses were made out.

Operation was done the day of admission. During the next two days the temperature ranged from 100.2° to 101.8°. The general condition however was satisfactory. She had no vomiting, and enemas gave good fecal and gas results. She was given nothing by mouth. February 10 the temperature was normal and she looked well. There was very little drainage. She was taken off the high Fowler's position and was given fluids without milk. Her progress was very satisfactory. February 19 the stitches were removed and the abdomen strapped with adhesive. February 21 the wound was well healed except for a small sinus at the lower angle where the drain was removed. That day she was discharged.

Discussion

BY HAROLD M. FROST, M.D.

In the past history and previous operation there is nothing pertinent to this last admission. She had had no abdominal operation previous to this. The operative procedure had apparently been limited entirely to the cervix and curettage of the uterus.

Abruptly, without any previous attacks, she develops pain in the epigastrium, colicky in nature, gradually involving the whole abdomen. Then she began to vomit, then to become distended. Her bowels were markedly constipated. The vomiting persisted for five days, becoming somewhat more frequent.

On the face of it there is evidently here an intestinal obstruction. Is it an acute obstruction? No, it is not, and for this reason: with an acute obstruction almost invariably we obtain an absolutely complete constipation, so much so that even with repeated large enemata—which, by the way, is one of the diagnostic procedures for determining whether an acute obstruction is present—we are unable to obtain either flatus or feces. That is the chief, the cardinal diagnostic sign of a real acute intestinal obstruction.

This woman had taken charcoal on the day her symptoms began, and four days later, after an enema, some of that had been passed. She had been passing a little gas with her enemata. So obviously this obstruction was not complete.

We were somewhat in doubt as to the possible origin. Of course in intestinal obstruction the origin may be classified under three sources: (1) From sources outside the bowel which produce pressure and obstruction. (2) Disease of the bowel wall. (3) Obstruction of its lumen by foreign bodies. The most common causes of obstruction from an external source are (1) herniae and (2) adhesions and bands, most commonly post-operative and following abdominal infections, preeminently appendicitis, frequently after pelvic peritonitis occasionally after tuberculous peritonitis There was no history of any such thing as this As to disease of the bowel wall itself, we should think at once, of course, of malignant or benign tumors. There had been no previous history of obstruction. This had a sudden onset. There were absolutely no signs of malignancy. Furthermore, there were no signs of stricture or compression following tuberculosis. It was not the sort of thing that we expect with a volvulus, a twisting of the sigmoid or cecum. In such cases there is intense pain, persistent vomiting, intense shock with collapse, rapid feeble pulse, and a very sick patient. This woman obviously was not so sick as that. So far as foreign bodies in the intestine were concerned, there was no way in which we could rule them out.

She did have certain signs of inflammation. She had a temperature of 101°. She had general tenderness with some spasm, and the tenderness apparently greater in the pelvis. The question came as to operation. Personally I am very unwilling to wait in any case where I think there is obstruction, regardless of whether it is partial or complete. In complete obstruction we cannot wait; in partial we have the privilege if we wish. Personally I prefer to operate at once. We did so in this case, and found a rather unusual condition.

The usual exploratory incision was made, suprapubic, in the median line. Of course the first place we seek in exploring an obstruction of unknown origin is the cecum. The cecum was markedly distended. The base of the appendix was found. Following down to the pelvis, a long acutely inflamed appendix extended down to the right ovary and tube. The right ovary was enlarged to about the size of a goose egg and cystic. The right tube was inflamed and swollen. The left ovary was likewise cystic, slightly smaller than the right. The left tube was inflamed and swollen. The uterus was adherent to the bladder in front. The appendix, both cystic ovaries, both tubes and the uterus formed one mass, filling the pelvis. An appendix epiploica extended as a band from the sigmoid to the fundus of the uterus, with considerable compression of the sigmoid itself.

The question arose as to what to do. Obviously the appendix had to come out. It did not seem wise at the time to attempt any radical procedures with the ovaries, uterus and tubes. We might perfectly safely have done that in the presence of a chronic gonococcal infection. In the presence of a colon or other such acute infection as would be present with an acute appendix it would be rather dangerous.

We took the appendix out, dilated the pelvis with the fingers, freeing the ovaries and tubes in order to give an opening through the sigmoid.

PRE-OPERATIVE DIAGNOSIS

Partial intestinal obstruction. Pelvic inflammation?

OPERATION

Gas-ether. Suprapubic incision through the inner edge of the right rectus sheath. The omentum was found adherent in the pelvis. When freed the pelvis was found to be filled with an inflammatory mass. The appendix was acutely inflamed, hanging over the brim of the pelvis, adherent to the uterus and the right tube and ovary. The uterus was adherent to the bladder. There were cysts of both ovaries about the size of a hen's egg. Both tubes were thickened and slightly inflamed. There was no free pus in the pelvis. The appendix was freed and removed, the stump not sutured. The left ovarian cyst, which was thin-walled, was pricked and evacuated. In view of the acute appendicitis it did not seem wise to attempt any radical procedure with respect to the uterus and appendages. A constricting band composed of an appendix epiploica was divided. Two drains were carried, one to the left pelvis and one to the right. The wound was sutured with through-and-throughs.

PATHOLOGICAL REPORT

An appendix 6 cm. long, swollen. The surface is covered with an inflammatory membrane. No perforation.

Acute appendicitis.

Further Discussion

The outcome was very satisfactory indeed. The patient never vomited after the operation. She left the hospital in about three weeks.

I saw her three weeks later in the Out-Patient Department. She had been absolutely free from symptoms.

I have discussed this case because it was somewhat unusual in origin, and on account of the very dramatic way in which the symptoms were relieved. It presents a very strong argument in favor of early interference in cases of partial intestinal obstruction.

LATER NOTES

March 5 the patient was seen in the Out-Patient Department. The sinus was almost healed. The wound was otherwise solid. She had had a few gas pains in the past two days. She was taking mineral oil. Her appetite was good. She had rather profuse leucorrhea. Douches were recommended.

March 10 the wound was healed and solid. She was feeling very well.

DIAGNOSIS

Lacerated cervix.
Endocervicitis.
Acute appendicitis.
Double cystic ovaries.
Intestinal obstruction.

GARVAN LEADS FIGHT ON COMMON COLD

Will Finance a Research to Discover Cause and Cure for Root of Many Ills

A research to discover the cause and a cure for the common cold, which was pronounced one of the greatest scourges of humanity, was undertaken by the American Drug Manufacturers' Association at its convention in New York City recently, when an offer to finance such a research was made by Francis P. Garvan, President of the Chemical Foundation.

Reporting good progress in the fight to establish the chemical industry in this country in competition with Germany in the fields which Germany formerly controlled, Mr. Garvan branched into the subject of the common cold, which he said was one of the greatest causes of mortality and economic loss, in spite of the fact that it is usually regarded as of slight importance. He said:

"Sitting at my desk, it seems to me as if a new industry was born in this country every minute, fathered by chemistry and mothered by research. But recently, in my pride and boasting of our achievements, the curtain lifted over something undone, a problem I have brought to you and which has, I might almost say, overwhelmed me in its importance and in the little that has been done with it. This is the subject of the common cold.

"When you come to consider that all through our lives we go on suffering from a cold and pneumonia, from mastoiditis and the sinus troubles, and a thousand and one things which develop out of the common cold, to say nothing of the inherent weakening of the physical structure by these repeated assaults upon ourselves, but more particularly upon our children and our women, you realize the gravity of the common cold.

"Do you realize that ten days of every man, woman, and child's activity a year, on the average, are lost throughout this country? It amounts to more than a million years of activity annually. The loss to agriculture, industry and all business activities is some 700,000 years of working time through the incapacitation of 15,000,000 workers in this country."

The American Drug Manufacturers' Association voted to coöperate with The Chemical Foundation in seeking a method to check the ravages of colds.

THE AMBITIONS OF A CHIROPRACTOR

A chiropractor in Kokomo, Indiana, has entered the political field and is making a campaign for election as coroner.

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The Massachusetts Medical Society

THE ANNUAL MEETING AT SPRINGFIELD

Indications multiply that the meeting of the Massachusetts Medical Society at Springfield, June 8 and 9, is to be a most successful affair. Back in 1855, three years after Springfield had been incorporated as a city, the Society met in what is now the metropolis of central Massachusetts and at that meeting Elisha Huntington, for seven terms mayor of Lowell, was elected president and Benjamin Eddy Cotting, the donor of the "Cotting Lunches", was made secretary. The Hampden District had then been organized for fifteen years; it had 53 Fellows in the society totalling 853 in the state. Today Springfield, the chief city of the Connecticut valley, a great manufacturing, banking and railway center, the third city in size in the Commonwealth, is the rallying point of our four western districts. It is easy to reach both by rail and by road. Distances are as nothing in this fifth smallest state in the Union. At the coming "anniversary" all of the exercises will be under the roof of the Hotel Kimball, a modern well equipped hostelry with accomodations for 500 guests. The officers of the six Sections have been active and have prepared interesting and drawing programs. Besides our Massachusetts talent, two noted men from Rochester, Minnesota, one of them Charles Mayo, are down to read papers; three men from New York are to come, including William Darrach, Dean of the College of Physicians and Surgeons, who will give the Shattuck Lecture on the topic: The Inter-relations of the Physician and the Hospital. Following the lecture Dr. George Burgess Magrath, Medical Examiner of Suffolk County, will give one of his inimitable talks on: Some Professional Experiences, illustrated with lantern slides, and there will be dancing and refreshments to follow. Dr. Charles F. Painter, former dean of the Tufts College Medical School and, since 1921 chairman of the standing committee of the Society on Medical Education and Medical Diplomas, will speak in his oration on: Educational Requirements for Twentieth Century Practice, Who shall deterine them and how may they be achieved? a subject he is well fitted to discuss. The Committee of Arrangements, both in Boston and Springfield, have spared no pains to make the meeting attractive. This year, after a long lapse of time, there will be both scientific and commercial exhibits, the seventh floor of the Kimball being given up to these. A special attempt has been made to entertain the wives and families of the Fellows, there being a separate headquarters for the ladies and, to occupy them while the heads of families are engaged in the literary activities of the meeting, entertainments such as golf, luncheons and teas at the country clubs, a "College Town" automobile trip to Mt. Holyoke, Amherst, the Massachusetts Agricultural and Smith colleges, and dancing in the hotel. There is to be a "Cotting Dinner" on Tuesday evening, for all Fellows and guests in place of the customary "Cotting Lunch," in the middle of the day, and the Annual Dinner will be served in the Ball Room of the hotel on Wednesday at 2 o'clock as the closing feature of the two day meeting. Among the sights in Springfield Fellows will want to see the United States Armory, built in 1794, the beautiful group of city buildings with the campanile tower and chime of bells, the new bridge across the Connecticut river and maybe take a look at the home of the Springfield Republican and the art and science museums of the public library where 200,000 volumes are stored, not to mention the many colleges which are within a short motoring radius. It is hoped that a large number of Fellows will take the time off to visit Springfield and will take their ladies with them. Next week we expect to publish the official program in full.

LAKEVILLE STATE SANATORIUM FOR NON-PULMONARY TUBERCULOSIS

The Lakeville State Sanatorium was formally opened for the exclusive care of non-pulmonary tuberculosis on April 27, 1926. Beds for fifty children have been available since last fall and sixty-five beds for women were made available two months ago. The men's ward with a similar number of beds is in process of remodelling and will be ready in a few months. The principal feature of the reconstruction has been the addition of a porch on the southern exposure protected on three sides with a glass-topped wind break to the south giving the maximum of sunlight and protection from the winds.

About two hundred and fifty persons were present at the exercises which included addresses, inspection of the plant and luncheon. Governor Alvan T. Fuller and his Council attended as well as representatives from neighboring state health departments, many of the local boards of health, state and county tuberculosis hospitals, trustees, medical staff and nurses of the Boston Consumptives Hospital, state and local tuberculosis associations, physicians, nurses and others interested in tuberculosis.

In opening the exercises the Governor stressed the progress that had been made in the control of tuberculosis and the other communicable diseases and contrasted with it the almost untouched field of the control of degenerative diseases. The great benefit derived from insulin might indicate still greater discoveries in store for the future. For the present the period health examination is a rational approach to the control of these diseases. In closing he asked that we "consecrate ourselves to the end that nothing which has been so dearly won shall be lost and that we will conquer the towering heights of disease that still overshadow us as rapidly as sound knowledge of these matters will permit."

Dr. Linsly R. Williams of the National Tuberculosis Association reviewed from a national standpoint the institutionalization of tuberculosis from 1857, when the Channing Home was opened as the first tuberculosis hospital, to the present time. He pointed out that the late Dr. Biggs had set the standard of one bed for each annual death from tuberculosis. In Massachusetts this has nearly been accomplished, the ratio being 1 to 1.09, while for the entire country it is almost 1 to 1.5. He noted that there is an increase in the institutionalization of early cases. Hospital construction has improved. Improvement is needed in complete coördination between hospital, sanatorium, dispensary, nursing service, health department and voluntary association. The modification of the Massachusetts program for tuberculosis is being watched with the greatest interest.

Dr. Vincent Y. Bowditch, one of the first consultants of the first State sanatorium at Rutland reviewed "The Landmarks in the State's Care of the Tuberculous." In 1891 the Sharon Sanatorium opened its doors and was followed in 1898 by the Rutland State Sanatorium in the establishment of which Alfred Worcester played a conspicuous part. He named others who had made striking contributions and outlined the development of city and county institutions. He paid tribute to the pioneer work of the Boston Tuberculosis Association and later the League. The supervision of delicate and exposed children is of paramount importance and the need is being emphasized by the State's Ten Year Program in schools which has been developed by Dr. Chadwick of Westfield. In closing Dr. Bowditch called attention to the excellent work of Dr. Crane in the Industrial Colony at Rutland and urged that it be supported.

"Non-Pulmonary Tuberculosis and the Medical Profession" was discussed by Dr. James S. Stone, President of the Massachusetts Medical Society. He stressed the relation of bovine tuberculosis to this type of disease. The death rate from pulmonary tuberculosis has been falling for more than two generations while that from non-pulmonary tuberculosis began to drop less than twenty years ago. Pasteurization has certainly influenced this fall. Until complete protection of milk supplies and otherwise has been obtained such service as is given at Lakeville is indispensable and will aid every physician in the Commonwealth.

"The Public Interest in Non-Pulmonary Tuberculosis" was presented by Dr. Kendall Emerson as President of the Massachusetts Tuberculosis League. The public knows very little of non-pulmonary tuberculosis and with its decreased prevalence they may know less in the future since the public forgets easily as shown by the indifference to protection against smallpox. It is the duty of physicians to persistently educate parents so that they may not tire of the long time treatment which is essential and follow a false chimera. "You will have gone far in your duty toward the public when you have instilled into the mind of every mother the immortal doctrine of a great father of surgery, 'I dress the wound, God heals it.' "

Dr. Leon A. Alley, Superintendent of the Sanatorium outlined the service offered at Lakeville. Helio Therapy, direct and artificial, dressings, casts, X-ray, laboratory and dental services are available. He emphasized the splendid service given by Dr. Z. B. Adams as Orthopedic Consultant to the institution. The immediate need for the future is a medical building where surgery may be done. The charges are $7.00 per week for all children and for adults paying their own board. When the city or town in which the adult has legal settlement pays the charge is $16.10 per week.

Dr. George H. Bigelow, Commissioner of Public Health, who presided, said that the only shadow over the occasion was that Dr. Kelley, the late Commissioner, was not present to see the realization of this part of the tuberculosis program which was developed under his administration. Dr. Sumner H. Remick, recently resigned as Director of the Division of Tuberculosis (Sanatoria), had also contributed largely toward bringing about this institution but the State was fortunate that Dr. Henry D. Chadwick had stepped into his place.

The addresses appear in full in another section of the JOURNAL.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

TOWNSEND, JAMES H., M.D. Harvard Medical School 1921; Assistant in Department of University Health, Yale University 1923-24; Health Director, St. Paul's School. His subject is "Measles Prophylaxis—The Use of Blood from Convalescents in a School Epidemic," page 869. His address is St. Paul's School, Concord, N. H.

RILEY, AUGUSTUS, A.B.; M.D. Harvard Medical School 1907; Instructor in Genito-urinary Surgery, Harvard Medical School; Associate Chief of Genito-urinary Dept., Boston Dispensary; Junior Visiting Surgeon, Boston City Hospital; Member, New England Urological Society, etc. His subject is "Syphilis of the Bladder," page 874. His address is 868 Beacon St., Boston.

SHEFFIELD, HERMAN B., M.D. College of Physicians and Surgeons, Baltimore 1895; Formerly Instructor in Diseases of Children, N. Y. Post-Graduate Medical School and Hospital; Author of several books on Pediatrics. His subject is "Active Intestinal Peristalsis as an Aid in the Reduction of Incarcerated Hernias," page 876. His address is 127 W. 87th St., N. Y. City.

FULLER, ALVAN T., Governor of the Commonwealth of Massachusetts. His subject is "Address at Dedication of Lakeville State Sanatorium for the Care of Non-Pulmonary Tuberculosis," page 877. His address is the State House, Boston.

ALLEY, LEON A., M.D. Tufts College Medical School 1915; Superintendent, Lakeville State Sanatorium; Member, National Tuberculosis Association, etc. His subject is "The Service Available at Lakeville," page 878. His address is Middleboro, Mass.

STONE, JAMES S., A.B.; M.D. Harvard Medical School 1894; F.A.C.S.; Surgeon in Chief, Boston Children's Hospital; Instructor in Surgery, Harvard Medical School; President, Massachusetts Medical Society. His subject is "Non-Pulmonary Tuberculosis and the Profession," page 880. His address is 286 Marlborough St., Boston.

BOWDITCH, VINCENT Y., A.B., M.D. Harvard Medical School 1870; Ex-President, National Tuberculosis Association; Medical Director, Sharon Tuberculosis Sanatorium; Director, Central New England Sanatorium, etc. His subject is "Landmarks in the State's Care of the Tuberculous," page 882. His address is 506 Beacon St., Boston.

WILLIAMS, LINSLY R., M.D. Columbia University Medical School 1899; Managing Director of the National Tuberculosis Association. His subject is "Progress in the Care of Tuberculosis from the National Standpoint," page 884. His address is State Department of Health, Albany, N. Y.

EMERSON, KENDALL, A.B.; M.D. Harvard Medical School 1901; F.A.C.S.; President Massachusetts Tuberculosis League. His subject is "Non-Pulmonary Tuberculosis and the Public," page 888. His address is 21 High St., Worcester.

JONES, T. DUCKETT, A.B. Virginia Military Institute 1919; M.D. University of Virginia Medical School 1923; Resident in Cardiology, Massachusetts General Hospital, and

SPRAGUE, HOWARD B., A.B.; M.D. Harvard Medical School 1922; Assistant in Medicine, Courses for Graduates, Harvard Medical School; Graduate Assistant in Medicine, Massachusetts General Hospital; Visiting Physician, House of the Good Samaritan. Their report of "Progress in Cardiovascular Disease" is concluded on page 889.

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The Massachusetts Medical Society

MEMBERSHIP CHANGES

FROM MARCH 1, 1926, TO MAY 1, 1926

LIST PREPARED BY THE SECRETARY

NOTE—The deaths have appeared in the columns of the JOURNAL, as *Recent Deaths* or *Obituaries*, as they were reported.

Berman, Philip G., has moved from Lowell (Middlesex North) to Boston (Suffolk), Boston City Hospital.

Blew, E. M., from Hathorne (Essex South) to Allentown, Pa., Allentown State Hospital (Non-Resident List).

Bliss, George S., from Hawaii to Spadra, Calif.

Brunelle, Pierre, Lowell, has changed his office from 841 Moody Street to 30 Standish Street.

Burke, John Robert, Holyoke, from 161 Appleton to 131 Chestnut Street.

Burnham, Elmond A., of Wellesley, now has an office in Washington, D. C., Veterans Bureau, Arlington Building.

Carr, Percy W., Hyde Park, from 1172 to 1106 River Street.

Collins, Frank L., from Reading (Middlesex East) to Ipswich (Essex South), 49 Central Street.

Consales, Peter A., Boston, from 10 Hancock Street to 20 Charlesgate West.

Desmond, Margaret E., Beverly, change to Welch, Margaret E., Beverly, 124 Rantoul Street.

Dodge, Arthur M., from Boston (Suffolk) to Hampton Falls, N. H. (Non-Resident List).

Ehrenclou, A. H., from Roxbury (Norfolk) to New York City (Non-Resident List), 45 East Fifty-fifth Street.

Fox, William Y., from Taunton (Bristol North) to Mattapoisett (Bristol South).

Giles, Newell W., New York City, now Bellevue Hospital, Twenty-sixth Street.

Hardwick, Everett V., from Florida (Non-Resident List) to Quincy (Norfolk South), 104 Revere Road.

Korb, Harry, New York City, has moved from East 103rd Street to Bellevue Hospital, East Twenty-sixth Street.

Larson, John G., Boston, from 366 Massachusetts Avenue to 68 Westland Avenue.

Leary, A. J., of Lawrence, now has his office at 477 Essex Street, in that city. Mornings from 9 to 12 he is at the Carney Hospital, South Boston.

Lee, Grace D. R., has moved from Medford to Allston, 1315 Commonwealth Avenue.

Leith, Richard B., St. Petersburg, Fla., now has his office at 555 Fourth Avenue North.

MacKillop, Daniel, Cambridge, from 307 to 381 Broadway.

McDonald, Wilfred C., from Worcester (Worcester) to Somerville (Middlesex South), 115 Porter Street.

Morse, Almon G., from Fort Thomas, Ky., to Sunmount, N. Y.

Morse, Joseph Louis, from Springfield (Hampden) to Roxbury (Norfolk), 42 Howland Street.

Nichols, Andrew, 3rd, Danvers, has moved from 10½ Maple Street to 10 Berry Street.

Paige, W. M., has moved from Lynn to East Lynn, 17 Lafayette Park.

Parker, Ernest L., from Worcester (Worcester) to Hingham (Norfolk South), 314 Main Street.

Roderick, Charles E., has moved from Foxborough to Wrentham, Minot St.

Root, Manly B., from Worcester to Westborough, the Lyman School.

Ross, Elizabeth, Pittsburg, Pa., has moved to the Homeopathic Hospital, Pittsburg.

Smith, Richard Ilsley, Boston, has changed his office from 270 to 475 Commonwealth Avenue.

Springer, Ernest, Boston, from 366 to 491 Commonwealth Avenue.

Steffen, Anna E., Dorchester, name is now Parker, Anna E. Steffen, Dorchester, 28 Rockwell Street.

Webber, W. G., from Newton Highlands (Middlesex South) to East Northfield (Franklin), 29 Highland Avenue.

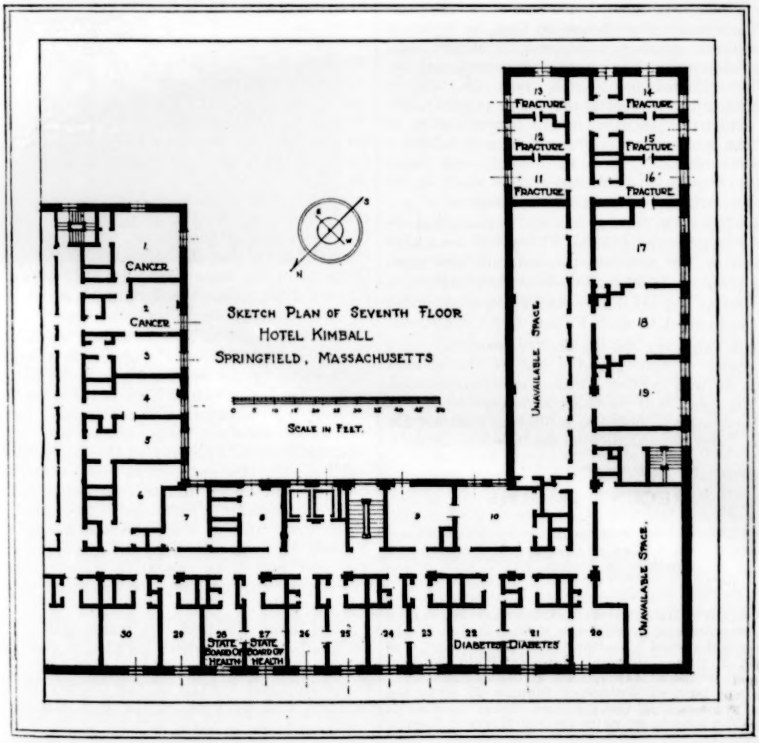
Whiting, George W. W., has moved from Somerville to West Medford, 50 Sagamore Avenue.

Williams, Augusta G., now Paris, France, care of Morgan Harjes et Cie, 14 Place Vendome.

Wood, W. Franklin, of the Suffolk District, now is assistant superintendent of the Danvers State Hospital, Hathorne, Mass.

Young, Annie R., from Waltham to Watertown, 10 Mt. Auburn Street.

Exhibitors' Section at The Annual Meeting



DETAILS OF THE COMMERCIAL EXHIBIT OF THE ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY AT SPRINGFIELD, JUNE 8 AND 9

This will be held in rooms on the seventh floor of the Hotel Kimball where all the section meetings as well as the annual meeting and banquet will be held. There are no official gatherings outside the hotel.

Among the commercial exhibits are placed the four scientific exhibits under direction of members of the Society. These are: one on Cancer, Dr. Robert B. Greenough and associates; one on Diabetes, Dr. Elliott Joslin and associates; one on the products of the State Board of Health, Dr. Benjamin White, and one on Fractures. See sketch plan of the space on the seventh floor on page 909. Only the rooms numbered can be used for exhibits. Of these, the following have been reserved:

Cancer	Rooms 1 and 2
Fractures	Rooms 14, 15, 16, 17
Diabetes	Rooms 21, 22
State Board of Health	Rooms 27, 28, 29

These rooms are chosen so that, in order to reach them, members must pass the other rooms, thus assuring publicity to the commercial exhibits. Rooms 9, 10, 18, and 19 will be divided into two booths each, and possibly into two and a half booths, in the larger rooms, to suit the smaller exhibitors. Will each exhibitor please designate his first, second, and third choice of space? Allotment will be made in the order in which reservations are received.

The individual rooms cost $40; one-half space in the larger rooms, $25. There will be a sign painter on the premises to paint uniform signs to be placed outside each door in the corridor.

A list of the exhibitors and articles exhibited will be handed to each Fellow as he registers.

Each exhibitor should answer promptly, give his choice of space, and a list of the articles which he will exhibit. Unless otherwise stated, the chairman will consider allotment of one of the three spaces chosen as a binding contract for space. Payment should be made before June 1.

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RECENT DEATHS

BRADFORD—Dr. Edward Hickling Bradford, orthopedist, former dean of Harvard Medical School, died of heart disease in Boston, May 7, 1926, at the age of 77.

JILLSON — Dr. Franklin Campbell Jillson, a prominent general practitioner of West Roxbury, who of late had turned his attention to laryngology, died at the Faulkner Hospital, Jamaica Plain, after a protracted illness, May 7, 1926, at the age of 62.

He was born at Worcester, January 28, 1864, the son of the late Hon. Clark Jillson. After training in the public schools Franklin entered Harvard Medical School and took his M.D. there in 1886. He settled in West Roxbury and was a medical inspector of schools and an agent of the Boston Board of Health. During the war Dr. Jillson was on one of the exemption boards and later was a captain in the Medical Corps. He had been a councilor of the Massachusetts Medical Society from the Norfolk District, and at the time of his death was a member of the medical staff of the Faulkner Hospital. He was a Mason. He is survived by his widow, Alice Selbert Jillson. A dependable practitioner, he will be much missed in his community.

ARONSON—Dr. Charles Aronson, a former Fellow of the Massachusetts Medical Society from Salem, but lately of Los Angeles, Calif., died suddenly on a train en route from Los Angeles to Tacoma, Wash., April 6, 1926, at the age of 30. He was a graduate of Tufts College Medical School in 1916. The cause of death was given as brain tumor.

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OBITUARY[*]

SAMUEL JASON MIXTER

Samuel Jason Mixter was born in Hardwick, Massachusetts, on the 10th of May, 1855. His father, William Mixter, and his mother, Mary Ruggles Mixter, were both of old New England stock. He died after a brief illness of pneumonia at Grand Junction, Tennessee, on January 19th, 1926.

His boyhood was chiefly spent at Hardwick and at school in Amherst, Mass. He entered the Massachusetts Institute of Technology, where his natural tastes led him to specialize in physics, and later, after graduation, to undertake the study of medicine, a course in which he received little parental encouragement. He graduated from the Harvard Medical School in 1879, completing his course as West Surgical House Officer at the Massachusetts General Hospital in the same year. In 1879 as well, on August 12th, came the fortunate event of his life, his marriage to Wilhelmina Galloupe.

This was followed by a year in Vienna, where his interest was keenly stimulated in anatomical studies and by the developing microscopic pathology. On his return to Boston his work in microscopy and anatomy was continued. In 1882 he became Assistant Demonstrator and in 1887 Demonstrator of Anatomy at the Harvard Medical School. His enthusiasm was infectious to students and drove him to continuous activity, to the painstaking care and thoroughness of which his beautiful corrosion specimens in the Warren Museum still bear witness. His teaching later swung to operative surgery, a field which gave further scope to his great mechanical ingenuity.

Thus, from the first, his tastes and training led him to surgery, where his ability and special aptitude resulted in rapid progress. Appointed to the Surgical Service of the Carney Hospital in 1880, and Surgeon to the Out Patient Department of the Massachusetts General Hospital in 1886, he became successively Surgeon to the Carney Hospital, resigning in 1897, Visiting Surgeon to the Massachusetts General Hospital in 1893, Chief of the West Surgical Service in 1911, resigning at the age of sixty four in 1919.

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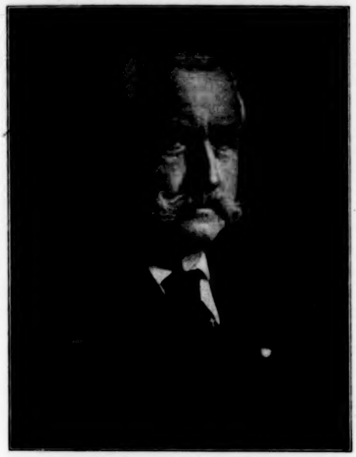
[*] Prepared for and adopted by the Boston Surgical Society.

From his background and the character of his training some inkling as to the nature of his surgery may be derived. Brought up on a sound anatomical foundation before the era of specialization, in the beginning of antisepsis, when the shadow of infection threatened, his training had a breadth and a respect for surgical dangers now vanishing. To this he added great mechanical ingenuity and a keen conservative judgment. His operating was marked by simplicity and directness, qualities which can only come from thorough anatomical knowledge, great skill and a keen appreciation of essentials. His sense of mechanical fitness made him dislike cumbersome instruments and technique. Intellectual honesty caused him to be impatient of shams and pretences, and of an unbalanced interest in percentage figures of operative mortality. Sound judgment, sure and rapid operating, complete lack of mercenary traits, entire self-forgetfulness in the interest of his patients, were qualities which begat confidence in the minds of practitioners and laity alike.



SAMUEL JASON MIXTER

In surgery his resourcefulness and ability to cope with the difficult and unusual attracted him to neglected fields. From this came his contribution to the surgery of the oesophagus and of the central nervous system, advances which stand out among others he added to the rapidly developing science of surgery. His contributions to operative technique, unfortunately, will be known chiefly by tradition; in the fertility of his invention they seemed to him hardly worthy of record. It is only natural and fitting, therefore, that he should have been chosen President of the American Surgical Association in 1917, and that the New England Surgical Society should have turned to him for its first President.

Success in a profession is in itself an accomplishment which the world stands ready to honor. Dr. Samuel Jason Mixter's eminence in surgery needs no comment or support; it is a fact grown so familiar that we can as yet be scarcely conscious of the gap left by his death. But although accomplishment in surgery should be duly honored, it is not for that reason alone that we delight in the memory of Dr. Mixter. We are led rather to think of the personality and character that lay behind it. To his numerous friends he seemed the personification of kindly hospitality, so open-hearted and genuine that it spread an irresistible warmth. It is pleasant to remember the true cordiality with which he was received at meetings of the American Surgical and Southern Surgical Associations. Some of us may think of the generous sportsman, forgetful of his own sport in the interest of sharing it with others, or of mornings during fishing trips spent actually holding impromptu clinics for the families of guides and natives, to be followed by minor operating on teeth and tonsils. Generosity, loyalty, affection, and interest in others, stood out in all his dealings. These same qualities shone most clearly during the War, and his sentiments of patriotism and of indignation against wrong were strikingly expressed in his Presidential Address before the American Surgical Association. One of the first men to join the Medical Reserve Corps at the time of its organization, he hastened to undertake active duty.

Through all this active and useful life there runs the support of an harmonious family relationship. In later years after retirement from active practice, it was natural that his interest should have turned increasingly to the scenes of his childhood in Hardwick, to his magnificent herd of Guernsey cattle there, and to the outdoor sports he so much loved. It seemed a fitting and peaceful conclusion to a full life. But the death of Mrs. Mixter left a void which his cheerfulness could not conceal.

To have contributed actively to surgery, to have held rightly the confidence of patient and of physician, to have stimulated warm friendships, to have served his country well, and to leave worthy successors, is it not enough? The Boston Surgical Society joins in expressing its regret at his death, and in conveying its sympathy to the members of his family.

G. W. W. Brewster,
E. P. Richardson.

REPORTS AND NOTICES OF MEETINGS

BERKSHIRE DISTRICT MEDICAL SOCIETY

Berkshire District held its annual meeting April 29th at which Richard Lewisohn of Mt. Sinai Hospital of New York City spoke on Blood Transfusion by the Citrate Method. Dr. Lewisohn was the originator of this method and gave a very interesting account of its origin and feels fewer people have chills following this method than any other. He told of the many difficulties of the direct method and said he devised the citrate method in an effort to reach the maximum of simplicity in contrast to the extremely complicated direct method. Scott Lord Smith, M.D., of Poughkeepsie, N. Y., John Ghormley, M.D., of Albany, N. Y., and T. Flournoy, M.D., of Pittsfield, discussed the paper.

At this meeting the following officers were elected:

President—George F. MacKay of Dalton.

Vice-President—Thomas P. Hennelly of Pittsfield.

Treasurer—Chas. T. Leslie, Pittsfield.

Secretary—A. P. Merrill, Pittsfield.

Com. of Trials—M. M. Brown, North Adams.

Councillors—H. Colt, Pittsfield; C. S. Chapin, Great Barrington; G. H. Thompson, North Adams; J. B. Thomes and A. P. Merrill, Pittsfield.

Councillor State Nom. Com.—C. S. Chapin.

Councillor State Nom. Com. Alternate—J. B. Thomes.

Censors—H. Colt, Supervisor, Pittsfield; N. B. McWilliams, Williamstown; C. S. Chapin, Great Barrington; A. C. England, Pittsfield; M. H. Walker, Jr., Pittsfield.

Com. of Arrangements—M. S. Eisner, Pittsfield; J. C. Roe, Pittsfield.

Com. of Nomination—G. H. Thompson, North Adams; Thomas Littlewood, Pittsfield.

THE PLYMOUTH DISTRICT MEDICAL SOCIETY

The Plymouth District Medical Society elected at the last annual meeting the following named officers:

President, Dr. A. C. Smith; Vice-president, Dr J. P. Shaw; Secretary and Treasurer, Dr. L. B Packard; Councilors, Dr. H. A. Chase, Nominating, Dr. N. K. Noyes, Alternate; Dr. J. H. Drohan, Dr. D. B. Tuholski, Dr. F. W. Murdock; Censors, Dr. H. A. Chase, Supervisor Dr. W. H. Pulsifer, Dr. S. W. Goddard, Dr W. G. Brown, Dr. E. J. Beaulieu; Librarian, Dr. J. H. Weller; Orator, Dr. W. G. Walker; Commissioner of Trials, Dr. L. B. Reed.

The next regular meeting of the Society will be held at the State Farm, Bridgewater, on May 20th at eleven o'clock.

The program will be furnished by the medical Staff of the Institution.

1. "Points to be considered in committing the Insane," Dr. Karl Sturgis.

2. (a) A case of congenital athetosis. (b) Two cases of Cancer treated by Radium, Dr. J. H. Weller.

3. "The Defective Delinquent," Dr. W. T. Hanson.

Luncheon. Inspection of buildings.

Dr. Jas. S. Stone, President, Mass. Medical Society, and Judge C. C. King of the Brockton District Court were honored guests.

Loring B. Packard, *Secretary.*

FALL RIVER MEDICAL SOCIETY

Wednesday evening, April 28, the Fall River Medical Society held its annual dinner in the Quequechan Club. About 65 members were present. The speaker of the evening was Dr. M. C. Winternitz, Dean of the Yale Medical School.

His address—Recent Advances and Studies in the Pathology of the Cardio-Vascular System, was illustrated by a series of extremely interesting and timely microphotographs.

The address gave the summary of a large amount of original work by one of the student body of the Yale Medical School.

This will later appear as an original monograph on the development of the blood vessels within the cardio-vascular system. Dean Winternitz is a very pleasing speaker and gave in easily comprehensible language the results of a large amount of original work which has been performed under his direction in the Yale laboratory. Much credit is due the committee which includes Doctors G. W. Blood, President; T. Almy, vice president; E. L. Merritt, Secretary; O. E. Boivin, Treasurer; George L. Richards and A. C. Peckham.

CONFERENCE ON MATERNAL AND INFANT HYGIENE

A conference on Maternal and Infant Hygiene was held at the Unitarian Church Parish House, Lexington, May 13, 1926, under joint auspices of State Department of Public Health and Directors of Public Health Nursing Organizations.

The speakers were George H. Bigelow, M.D., State Commissioner of Public Health; M. Gertrude Martin, R.N., State Department of Public Health; Miss Florence Patterson, Community Health Association, Boston; Robert L. DeNormandie, M.D., Boston.

SOCIETY MEETINGS

District Medical Societies

Middlesex East District Society

May—Annual meeting, Colonial Inn, North Reading. Speaker, Dr. E. H. Place. Subject to be announced.

Notices of meetings must reach the Journal office on the Friday preceding the date of issue in which they are to appear.